DOMESTIC ENGINEERING

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ALFRED C. EYNON, CANTON, OHIO

President of the National Association of Master Plumbers of the United States

Who will preside at the Thirtieth Annual Convention of that organization, which is to be held at Salt Lake City, Utah, July 16, 17 and 18, 1912

Pre-Convention Suggestions

Timely Information to Local Associations and Individual Members of the National Association of Master Plumbers

By Alfred C. Eynon

The following pre-Convention suggestions and timely information are offered to local associations and individual members of the National Association of Master Plumbers.

The official Board of Directors of the National Association ask your attention to the express importance of your representation by state and local association delegates at the coming annual convention, and urge the attendance of delegates from every local association that can possibly afford to send one or more to that important meeting at Salt Lake City next July.

Convention History.

The first organized convention was held in New York City in 1883. One hundred and twenty-five delegates from twenty-one of the leading cities in our Union attended.

The objects, requiring the Master Plumbers to affiliate into one grand body, were thoroughly discussed and agreed upon, and were considered imperative to establish plumbing as a permanent and recognized business by the public.

What are the Objects?

First.—The advancement of sanitation and the encouragement of sanitary laws and their enforcement.

Second.—The improvement of plumbing appliances and plumbing installation.

Glenwood Springs, Colo., One of the Many Attractive Landscapes to be seen on the Trip to the Convention.

Third—The education of the members of our craft in sanitation and all that pertains to the betterment of plumbing, and the best methods to adopt in conducting such business.

Fourth.—To establish harmonious and equitable relations between Master Plumbers, manufacturers and jobbers in supplies used in the plumbing and drainage business.

Fifth.—To educate properly the apprentice in plumbing so that he may be a useful member of society in future years.

The National Convention.

This means a yearly conference of the entire membership, through their best informed and interested members called delegates, who meet in a body to discuss and devise ways and means for the future toward up-building our profession and sustaining the obect of our organization.

For twenty-nine consecutive years the Master Plumbers in the United States have labored for the cause, to keep in the front rank of the progress of society and our Nation

This year we celebrate our **Thirtieth Anniversary.**

We want a record breaking convention in point of important business and in attendance. We therefore, earnestly appeal to you to consider carefully our plea for the selection of one or more delegates from your local to the National Convention, having in view the fact that every local, no matter how small or large, is a strong link in the chain of National Organization, and that delinquency in attendance or interest on your part, weakens the chain. It is your benefit we are working for and it is your interest to be represented properly at our National Meeting.

Your membership in the National Body is a business asset, therefore, it is very imperative that you should be represented there and take part in the transaction of its business affairs.

Locals, select one or more delegates in accordance with your number. Personal contact in Convention Proceedings, and a live report from your delegate proves far more educational and interesting at home than reading from the National Proceedings or the trade press.

Arrangements.

Every comfort and detail has been considered for your attendance at the Annual Convention, so that pleasure may be combined with business in your performance of duty.

Transportation.

The Official Board has selected a certain route to the Convention City, namely, the Atchison, Topeka & Santa Fe Railway, via Chicago, Kansas City, Pueblo, thence, Denver and Rio Grande Railway to Salt Lake City.

Observation Point, near Cripple Creek, Colo., Another Interesting Landscape on the Way to Salt Lake City.

Read the official itinerary recently mailed to you, carefully, for details. It contains every bit of important information that you need to make your trip pleasurable and profitable.

It is our desire to gather members en masse and enter the Convention City as one progressive wing of society with honest purpose.

The world needs people who do things and know how. Why should not the Master Plumber continue to exemplify that great virtue?

Don't say your treasury will not permit sending a delegate, but go down into your private treasuries and let each member contribute to the delegate's expense, because it will be worth the doing.

Program.

Arrive at Salt Lake City—

Sunday morning at 8:30 o'clock.

Sunday afternoon at 2:00 o'clock, song recital in Mormon Tabernacle.

Monday.

Meeting of Official Board, sightseeing, automobile rides, reception at Hotel Utah for members and ladies.

Tuesday.

At 10:00 a. m. convention opens with probable addresses by—

The Governor of Utah,

The Mayor of Salt Lake City.

Ex-Congressman B. H. Roberts, and Ex-President H. Green of the Local Association of Master Plumbers.

Tuesday afternoon, Wednesday and Thursday will be given to the Convention for a review of the past year, and up-building for the year ahead of us.

Entertainment.

A pleasing program has been arranged for every day and every evening the entire week.

Special Features of the Convention.

Place—Salt Lake City, Utah.

Time—July 16, 17 and 18, 1912.

Reports by the Sanitary Committee.

Reports by the Essay Committee.

Reports by the Legislative Committee.

Reports by the Special Committee of Master Plumbers and Master Steam and Hot Water Fitters' Association, of the United States.

Reports by the National President and elected officers.

Individual members are welcome to attend with elected delegates.

PROGRAM FOR THE TWENTY-FOURTH ANNUAL CONVENTION OF MASTER STEAM AND HOT WATER FITTERS.

Henry B. Gombers, secretary of the National Association of Master Steam and Hot Water Fitters, has just issued the official program for the 24th annual convention of that organization, which is to be held in Atlantic City, N. J., on June 10, 11, 12 and 13, 1912. The program in full follows herewith:

List of Events.

Headquarters where Committees will meet and sessions of Convention will be held are at Hotel St. Charles, Boardwalk and St. Charles Place, Atlantic City, N. J.

Monday Morning, June 10th.

Meeting of Committee on Trade Relations at 10:30 o'clock.

Meeting of Committee on Standardization at 11:30 o'clock.

The Atlantic City Country Club has extended to members and guests attending the Convention an invitation to use the golf links of the Club on Monday, June 10th.

Monday Afternoon, June 10th.

Meeting of Board of Directors at 2:30 o'clock.

Master Steam Fitters' Association team and Eastern Trade Golf Association team will play a match on Country Club Links.

Monday Evening, June 10th.

Music by string orchestra in the Green Room at St. Charles Hotel.

Tuesday Morning, June 11th.

First General Session of the Convention will be called to order at ten (10) o'clock. Open to members, guests and ladies. Everybody will be welcome.

Address by the Mayor of Atlantic City.

Appointment of Committee on Credentials.

Address of President Edward B. Denny.

Report of Committee on Credentials.

Appointment of Committees by President Denny:

Nominating.

Constitution and By-Laws.

Appeals and Grievances.

Ways and Means and Good of the Order.

Auditing.

Distribution of Reports.

Reception.

Tuesday Afternoon, June 11th.

Executive Session at 2:30 o'clock.

Report of Board of Directors, William H. Oakes, Chairman.

Report of Committee on Trade Relations, Noble P. Bishop, Chairman.

Report of Committee on Standardization, William J. Baldwin, Jr., Chairman.

Report of Treasurer, Juan A. Almirall.

Report of Secretary, Henry B. Gombers.

Immediately after this Session adjourns the several Committees will meet in Convention Hall.

Tuesday Evening, June 11th.

At 8:30 o'clock sharp, a Rifle Match between teams from the National Association of Master Steam and Hot Water Fitters and the Manufacturers and Supply Men's Association will take place at Log Cabin Shooting Gallery, 2027-2029 Boardwalk (near Million Dollar Pier).

Wednesday Morning, June 12th.

Executive Session at ten (10) o'clock.

Reports from Convention Committees.

New Business.

Wednesday Afternoon, June 12th.

Open Session at 2:30 o'clock. Everybody welcome.

Convention photograph is to be taken at 2:30 o'clock sharp. Members and guests, including the ladies, are especially requested to assemble promptly in the Convention Hall at 2:15 o'clock.

Be sure to register and have a place in the picture so that a copy of the photograph can be sent to you with the compliments of the Association.

Addresses or papers by prominent members and guests.

Report of Nominating Committee.

Election of officers.

Wednesday Evening, June 12th.

At eight (8) o'clock sharp, a Bowling Match between teams from the National Association of Master Steam and Hot Water Fitters and the Manufacturers and Supply Men's Association will take place on the alleys at Sweeney's Academy, on the Boardwalk, corner of Virginia Avenue.

At eight (8) o'clock sharp, the Ladies Bowling Match will also take place on alleys at address above mentioned. Every lady is eligible to enter the game.

Pool and Billiard Tables will be placed at the disposal of members and guests for their entertainment while the Bowling Matches are going on.

After the above matches have been decided, everybody is invited to adjourn at once to the Banquet Room where prizes will be distributed and refreshments served.

Thursday Morning, June 13th.

Last session of the Convention at ten (10) o'clock to dispose of unfinished business.

A magnificent trip by special trolley trains will be taken starting from Virginia Avenue and Boardwalk, via East Shore Line to Ocean City, passing through Pleasantville, Linwood, past the Country Club to Somers' Point.

Remodeling a Church Heating System

By Charles L. Hubbard

The following problem is of interest as showing a comparatively simple method of changing over an unsatisfactory furnace heating system in a church to steam system, with gratifying results. The layout of the old system is shown in Figs. 1 and 2. The open basement (Fig. 1) contained two furnaces, taking their air supply from inside, no connection with the outside air being provided. One of these furnaces had a grate 24 inches in diameter and the other 28 inches, making a total of 7.4 square feet of grate area. Reference to Fig. 2 shows four circular register faces in the floor, which measure 36 inches in diameter.

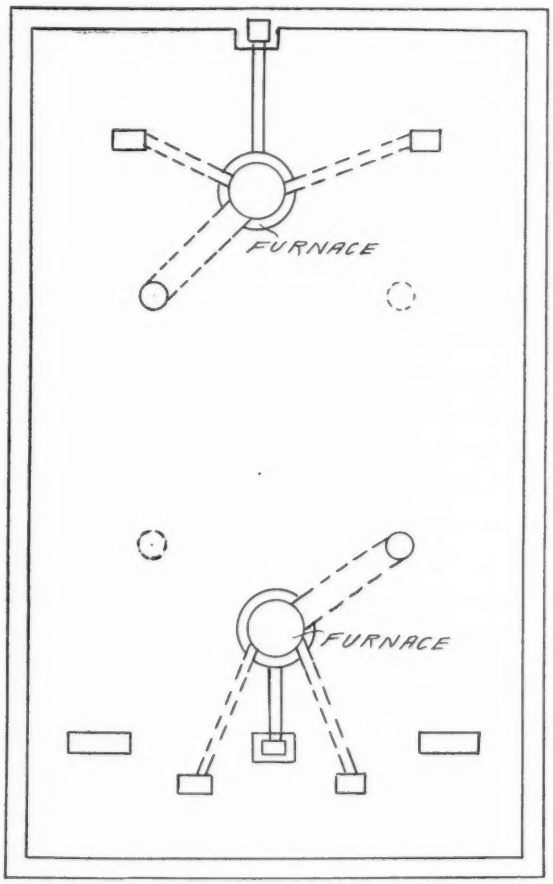


Fig. 1.

Two of these connected with the furnaces, while the others simply opened into the basement and served as rotation registers, thus using the air over and over again without any mixture of fresh air from outside, except as it found its way in by leakage. In addition to the auditorium, heat was supplied to two small rooms at the rear, and to the main vestibule as shown.

There was no particular difficulty in warming the church in ordinary winter weather, but the ventilation was very bad, as may be imagined with 300 occupants and neither fresh-air supply nor discharge ventilation, except that due to leakage.

The problem which presented itself was to prepare plans, and obtain the cost, of the simplest system which would both heat and ventilate the building properly in Zero weather. Measurements at the building gave the following data:

Net wall surface	4,630 sq. ft.
Glass surface	650 sq. ft.
Ceiling	4,800 sq. ft.
Floor	4,800 sq. ft.

In computing the heat loss per hour, the following factors were used:

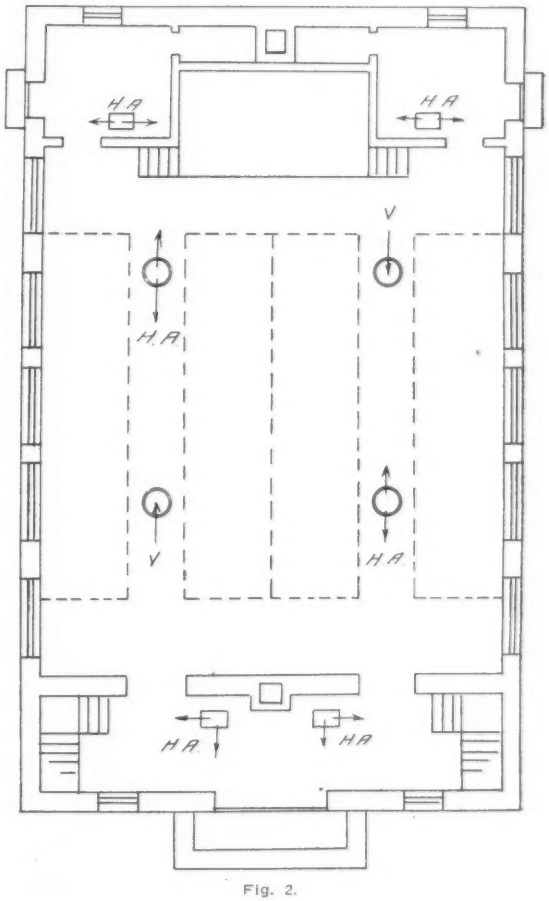


Fig. 2.

Wall (wood) 20 T. U. per square foot.
Glass (single) 80 T. U. per square foot.
Ceiling (attic over) 15 T. U. per square foot.
Floor (basement) 10 T. U. per square foot.
Increase for leakage, 30 per cent.
Increase for exposure, 10 per cent.

Applying these factors to the problem gives the following results:

		T. U.
Wall	4,630 × 20 =	92,600
Glass	650 × 80 =	52,000
Ceiling	4,800 × 15 =	82,000

Floor ..... 4,800 × 10 = 48,000

Total per hour..... =274,600

Increasing for leakage and exposure gives a total of 274,600 × 1.30 × 1.10 = 392,678, or in round numbers, 400,000 T. U. per hour.

Assuming 300 occupants, and an air supply of 1,000 cubic feet each per hour, calls for $\frac{300{,}000 \times 70}{55}$ = 381,818, or in round numbers, 400,000 T. U. per hour for ventilation, making a total of 400,000 + 400,000 = 800,000 T. U. for both heating and ventilation.

Assuming a cast-iron house heating boiler to be used,

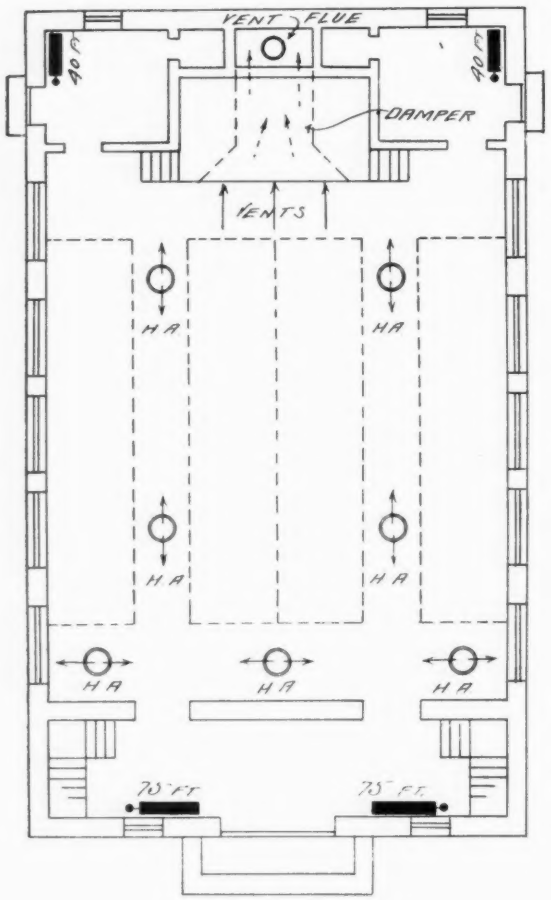


Fig. 3.

burning 5 pounds of coal per square foot of grate per hour, and utilizing 8,000 T. U. per pound of coal, it calls for $\frac{800{,}000}{8{,}000 \times 5}$ = 20 square feet of grate surface. A Gurney boiler, No. 1205, has a grate 48 × 58 in., giving an area of 19 square feet, and an Ideal boiler, No. S-48-7, has a grate 48 in. by 64½ in., with an area of 21 square feet. Either one of these, or other first-class boiler of practically the same size should do the work satisfactorily. The heat loss for the vestibule is found by the methods given, to be approximately 35,000 T. U. per hour, which calls for 35,000÷250=140 square feet of direct radiating surface. The small rooms of the rear have a heat loss of 10,000 T. U. per hour each, calling for 10,000÷250=40 square feet of surface. 10,000+10,000+35,000=55,000 T. U., to be provided for in the form of direct radiation, leaving 800,000—55,000=745,000 T. U. per hour to be supplied to the auditorium by indirect radiation. Assuming an efficiency of 500 T. U. per square foot per hour in zero weather, this will call for 745,000÷500=1,490 square feet of indirect surfaces which may be taken as 1,500.

This is equivalent to (1,500×2)+150+40+40=3,230 square feet of direct radiation, which calls for a chimney 20 inches in diameter and 50 feet high. Let the first floor plan of the new layout be as shown in Fig. 3.

The small rooms are each provided with a direct radiator of 40 square feet, and the main vestibule with two radiators of 75 square feet each, as computed The four 36-inch floor registers in the old arrangement are retained, but are all used as inlets. To these are added three more of the same size, near the main entrance, as shown. The old chimney has been removed and a new iron stack of the dimensions given has been provided in

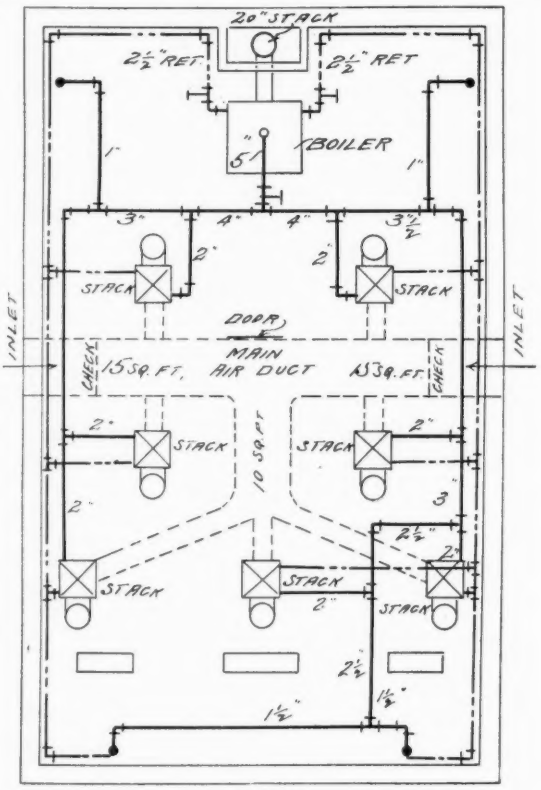


Fig. 4.

place of it, and is carried up in the center of a new brick vent flue 36 in. by 60 in. in size. This is figured on a flue velocity of a little over 250 feet per minute, and allowing the passage of 70 per cent of the air supply to pass outbound in this manner. The remainder is supposed to find its way out by leakage. As the hot chimney stack is carried up in the center of this flue, a good draft will always be assured without the use of a flue heater. The room communication with the vent shaft is through registers in the front of the platform, the same being connected by means of a galvanized iron duct having a sectional area of 15 square feet. Three register faces are used in the front of the platform, each 24 in. by 28 in. in size. A damper, operated from the basement, is placed in the

duct beneath the platform for closing when the auditorium is not in use.

A basement plan of this layout is shown in Fig. 4. An indirect heater containing 1,500÷7=215 square feet of surface is placed beneath each of the seven floor registers as shown. These are made up of 14 sections of 10-inch pin radiators rated at 15 square feet per section, and divided into two groups separately valved. The supply and return piping is run as shown, with the main returns near the floor, in order to water-seal them and thus secure quietness of action.

The sizes of the pipes are based on the following table, counting each square foot of direct surface as ½ of a square foot of indirect.

Table 1.

Square feet of indirect surface.	Dia. of supply, in inches.	Dia. of return, in inches.
30	1	1
50	1¼	1
70	1½	1¼
180	2	1½
240	2½	1½
540	3	2
800	3½	2
1,150	4	2½
2,000	5	3
3,300	6	3

The cold-air supply ducts are based on an air velocity of 250 feet per minute, which calls for a total of 5,000÷250 =20 square feet inlet, or 3 square feet for each of the 7 heating stacks. The air supply is so arranged that it may be taken from either side of the building according to the direction. This is made partially automatic by placing air checks of stout canvas just inside of each inlet under the guard against a reversal of current and prevent the air from blowing into one inlet and out of the other. The inlet windows each have an area of 15 square feet, it being assumed that when all of the air comes from one direction, the force of the wind will increase the velocity above 250 feet per minute. In still weather air will pass in through both openings. A large opening, with door, is provided in the side of the cold-air duct for air rotation when it is desired to warm the building without ventilation. At such times the inlet windows are closed and the stairway doors opened leading from the auditorium to the basement. The connections between the heating stacks and the registers above are of the same size as the cold-air supplies, and are provided with mixing dampers operated from the basement.

The approximate cost of this layout was figured as $2,800.

The Advertiser's Creed.

I believe in publicity, and in every legitimate method of catching the eye and reaching the ear of any possible customer.

I believe that repetition must result in emphasis, that emphasis must in time attract attention, that attention must create interest, that interest must yield orders.

I believe that the way to sell goods is to advertise them, to sell goods is to advertise them, to tell people about them continually, to talk straight and to talk honest.

I believe that the market is as big as the world, that a slice of it belongs to me, that my goods are worthy of it, and that I am going to get it.

Plenty of Them There.

Spencer—Show me a man who likes to be interrupted in the middle of a sentence.

Ferguson—All right. Come along with me to Sing Sing. —Truth.

RINGING DOOR-BELLS.

By William Robert Marshall.

Some time ago I heard a story of a young man who was hired to sell pianos. They sent him out to a section of the city which had always been considered tough territory but to the amazement of all he really and truly sold a piano, then another and again some more, then sales manager and the high salaried cracker-jacks were astonished, mystified, something surely was wrong and it obviously was not the cub salesman.

"New brooms sweep clean," "tenderfoot luck," "a flash in the pan," "he cannot keep it up," "a quick breaker but a mutt in the stretch," were some of the arguments advanced to explain the phenomenon.

When he reported the territory cleaned up, they believed him and dug up another grave-yard district and sicked him to it.

Then wonders upon wonders the same thing happened over again; he sold a piano, then another and again some more and when he reported the territory finished the sales manager reluctantly told him the president wished to see him.

When he edged into that Sanctuarium of Wisdom, the President's Office, the President invited him to be seated while he finished reading his morning mail. That finished he turned leisurely and dignifiedly around in his chair, looked the young man over very carefully from his feet to his head and back again, while the young man whirled his Stetson on his index finger.

Young man, he began in his most impressive style, I find in the sales reports which I study with more assiduity than I do my check-book, that for the past few months certain territories in which heretofore we have been unable to place any of our elegant pianos, have been yielding us some results, I might add some very good results. Inquiry to the Sales Department for an explanation of the reversal of form leaves me as much in the dark as I was before, therefore I have sent for you, to ask how you did it.

Well sir, began the youth, when I first started out I only got a nibble once in every three or four days and I figured that wasn't going to get me very much, so I just kept an account of how many calls it took to get a nibble and then I increased my calls per day to bring up the number of nibbles to a respectable number and after trying out my system, I figured that by ringing a hundred door-bells a day I ought to get the proper proportion and by getting out early in the morning and cutting out the noon pool game I found I was just able by keeping at it continuously to ring just a hundred door-bells a day.

Hump! Quite an original idea for a youth. I must say, replied the President. Suppose you take Jones, Waterman and Smiley and go down to Jonahsburgh and try out that system there and report to me in thirty days how it works. He went. It worked and he reported. Maybe he is General Manager now. I don't know, but the fact still remains that successful endeavor is greatly a matter of ringing door-bells.

Maybe you are not satisfied with the results of your labors. Maybe you are not able to diagnose your trouble, try ringing a few more door-bells—everyone you add to your now accepted quota increases your field of possibilities just so much and keeps adding a few more to it until Mediocrity and Defeat take the count.

Rome, Ga.—The Copeland Plumbing Co. has been incorporated with a capital of $1,200, by W. P. Copeland and H. A. Powers.

"Plumbing for Profit"—Part VIII

Plumbing Specifications, Allowance for Salvation Clauses and Catch Clauses, and How to Eliminate Them From the Specifications

By J. J. Cosgrove

"Fools argue, wise men discuss."

Plumbing plans and plumbing specifications are so intimately related that a consideration of one naturally leads up to a consideration of the other. In the last installment I pointed out how the contracting plumbers lost a large amount annually on account of poor plans; how there were no standard symbols for representing plumbing work and fixtures; how the extent of the plumbing work is never fully indicated on the plans; and, finally, by not showing just what work is to be done, a premium is put on poor work, for the plumber who slights his work the most naturally will have the lowest bid.

But, the question is, who is responsible for this state of affairs, and what are we going to do about it? In answer it is hard to say who is to blame for the present state of affairs, or whether anybody can be said to be at fault, for it is a condition which arose or grew out of the tremendous improvement made in plumbing practice during the past quarter century, and the inability of the architects and the trade to keep up with the times. You will observe that all improvement or advancement made in a line must come from within the trade or profession itself. Take the iron and steel industry for example. Structural steel work became an independent profession a number of years ago and that profession worked out carefully and in detail the strength and best design of every member and every combination of steel construction. Having thus put their business on an exact basis, books were published on the subject, and the information was put before architects and engineers in such a way that they could design and proportion everything about an important steel construction, even to the minutest detail. As a consequence, in that class of work, the size, shape, location and all other necessary data about the various members, together with the location and size of the various rivets are detailed, so thoroughly have they this line of business in hand. In the case of plumbing work, on the contrary, changes have taken place so rapidly that it was all we could do to keep in touch with them, let alone systematizing them for others to use. Twenty-five years ago the business was a lead working trade where skill in the manipulation of lead in all its various forms was the main requisite, and knowledge of sanitation, hydraulics, building, mechanics and natural philosophy were not considered necessary. In the meantime, the modern type of building has wrought such a change that manual dexterity or skill in the handling and working of materials has given way to knowledge of how the work ought really to be done.

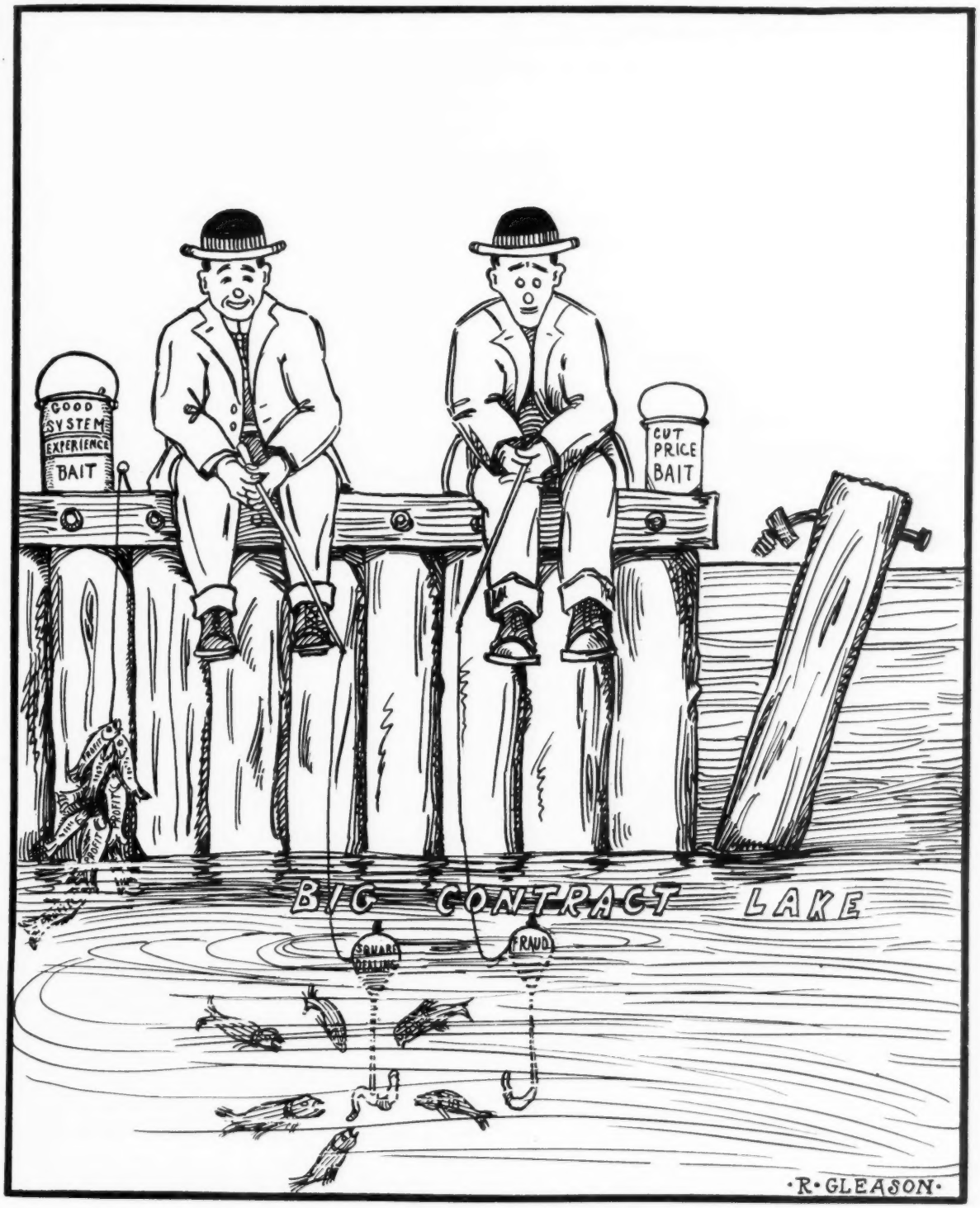
Now, as we ourselves, up to recently, have been unable to lay out a full and complete set of plumbing plans, we could not teach the architects to do so; consequently they cannot be blamed for not knowing what in the first instance they must learn from us. It is owing to this reason that in the past we have not had the plumbing plans demanded by the nature of the work and its importance. Up to five years ago, there was no place or no book from which the architects could learn plumbing work, and only within two years has it been possible for them to purchase a book on plumbing plans. Yet, so anxious are they to master this branch of the building business, that at the present time these works have been eagerly seized upon by over fifty colleges and universities in the United States teaching architecture and engineering and used by them in class studies; while over 50 per cent of the practicing architects have purchased copies for their office use. Before that time, it is no wonder that plumbing work was indicated on plans only by locating the fixtures, and that with no uniformity of symbols used. Within the past two years, however, there has been a marked change for the better, and a greater uniformity of symbols used, which is a hopeful indication.

So far the architects have done their part and shown their willingness to better plumbing plans. It is now up to us to do our part, and after all we are the ones who have the most at stake. If, then, after adopting and approving the plumbing symbols mentioned last week, we have the architects and architectural schools do likewise, we will have made a great stride in the right direction, but we will not have done all that is required of us. After they have adopted the symbols, the next move will be to bring to their attention the lack of plumbing details, and secure their co-operation in bringing about that reform. When that is securely accomplished, we want to take up with them certain phases of specification writing which ought to be amended, and which I will shortly outline. Remember, though, that whatever we accomplish in this direction will be and must be with the assistance and co-operation of the architects themselves, and this assistance I am satisfied can be secured if we go about it in the right manner. There ought to be a standing committee of the Master Plumbers on "Trade Relations" to follow up this and other matters of interest to the plumbers, and continue their activities all during the year.

In the matter of specifications a certain amount of help can be had from the architects, but so far as the rest of the relief is concerned, we must depend upon our own selves, and the education of the craft, to pull us through the shoals and past the hidden reefs and sunken wrecks to safety; for, most of the hidden dangers in plumbing specifications are of design—design of that class of architects who cannot write a fair specification, or do not want to do so but want to hedge themselves around with hidden jokers which put the plumbing contractor at their mercy at all times. Take, for instance a "salvation clause" in plumbing specifications. I cannot do better than to quote here what I said on the subject in Plumbing Plans and Specifications:

Salvation Clauses.—When a clause to the effect that "The work shall be under the general supervision of the architect, whose decision as to the true intent and meaning of the drawings and specifications will be final and conclusive," or any other salvation clause of like purport, appears in a specification, it is a written confession that

"Domestic Engineering" Cartoon on "The Danger of Underestimating".—LXIV.



Use the Proper Bait and Get What You Are After.

If you want to possess a special proof of this or any other of our cartoons, let us have your request at once. We have many applications for our cartoons for framing and want to take good care of all demands made.

the person who prepared the plans and specifications in question did not understand his business, knew his limitations, and is trying to protect his ignorance by hedging himself around with a number of clauses which, in matters of dispute, vests him with unlimited arbitrary authority to decide the case in his own favor, regardless of the merits or justice of the case. If plans are properly prepared and specifications capably written there will be no question as to their true intent and meaning; if they are not clear and explicit, it is the construction put upon them by the reader, not the writer, which should be final and conclusive. The designer in preparing his drawings and specifications knows, or ought to know, what he wants to show and describe. Having this knowledge and ample time at his disposal, he is supposed to have made a record of his desires. If through ignorance or lack of ability he fails in his effort, he alone is the one who should stand responsible for the failure. Such designers, however, usually try to shift the responsibility to the contractor by reserving to themselves unlimited arbitrary power, concealed in innocent-looking salvation clauses similar to the one quoted. When an estimator is given a set of drawings and a specification on which to base his estimate for work, he is justified in believing that the architect or engineer has expressed himself fully and clearly in his work. He cannot read the designer's mind to learn what was intended, but must base his estimate upon his interpretation of the drawings and specifications furnished him. If the designer had one thing in mind, but unable to express it, has conveyed an entirely different impression, or has left much unsaid and undrawn which he had planned in his mind to show and state, the contractor should not be called upon to include such work and material in the contract as fully as though shown by the plans and described in the specifications, but this he can be made to do under the salvation clauses of ignorant or dishonest architects or engineers.

Just what affect "salvation clauses" have on the plumbing contract, and how to guard against their harmful effect, are concisely stated under the caption Allowance for Salvation Clauses in Plumbing Estimates and Contracts. The section follows:

Allowance for Salvation Clauses.—When an architect or engineer is incompetent to prepare plumbing plans and write the specification so as to cover fully all the materials to be furnished and the work he wants done, he covers his incompetency at the expense of the contractor by inserting a clause giving himself unlimited power. That is a salvation clause. Usually, while unable to write a specification, that type of architect or engineer is quite proficient at the wording of salvation clauses, so that the most innocent seeming statement leaves it in his power to decide how much work and what material are to be furnished according to the plans and specifications. A usual form of salvation clause is the statement: "The work shall be under the general supervision of the architect, whose decision as to the true intent and meaning of the drawings and specifications will be final and conclusive." At some other part of the specification the clause: "All work and material must be first-class in every respect, and to the satisfaction of the architect." Combining these two conditions gives the architect such power, together with what he may usurp, that in operation they generally insist that anything they wish done, no matter how whimsical and unreasonable, is part of the contract, because without it, **in their opinion,** the work would not be first-class, and they are the ones to decide the point.

Such a clause is a dangerous power to place in the hands of an unscrupulous man, and generally those who resort to such unreasonable subterfuges are not overburdened with scruples. It is well to beware of the terms "first class" in a specification. It is an unnecessary term, at best, for if the plans are properly prepared, and the specifications properly worded, the two combined will show conclusively the quality of materials and class of work to be furnished and the combined salvation clauses can be omitted.

The salvation clause is simplicity itself in operation. If for any reason the designer does not like the work as laid out, if he conceives of a way the work can be made more costly without adding one bit to its appearance or efficiency, if, in short, any way presents itself so the contractor can be harried into additional expenses which will use up all of the profit figured on, and some of his own money, depend on it that that type or architect or engineer will insist on the work being done; for it is the boast of that class of individuals that no contractor ever makes a profit on their work. To enforce their orders payment is refused until their dishonest demands are complied with. It is gratifying to say, however, that the salvation-clause architect is the exception. Most architects insist on good work, but are willing to have the contractor make a fair profit on their contracts.

When salvation clauses are found in a specification the estimator has the alternative of two safe courses. He can either refuse to estimate on the work, thus saving loss of time, worry and loss of money should he secure the contract at his usual price, or he can follow the example of those who have learned by experience and, after finding his cost, double it and add from 50 to 100 per cent to his bid, indifferent whether he is awarded the contract or not.

I have talked to architects who were engaged in preparing plans and specifications for the plumbing work in buildings they were designing, and who wanted some assistance along that line. Most of them want the plans, details, and specifications made as full and complete as possible, so nothing will be left to conjecture or chance. Others take the other view, unfortunately, and tell you frankly they do not care what the plans are so long as they pass the plumbing examiners, and fulfill the requirements of the plumbing code. That is the class of architects which depends on salvation clauses and catch clauses to give them the whip hand, so they can make the plumber do just as they want him to do, whether or not what is required of him can rightly be considered part of the contract. For there are not only salvation clauses in many specifications, but there are "catch-clauses" besides, and those catch clauses, which often are intended for favored bidders become a two-edged sword when the contract is landed by an outsider, for he will be forced to live up to the letter of the specifications, furnishing the very best materials which can be exacted under their provisions, while the favored contractor could put in whatever he chose. The matter of "catch-clauses" was fully treated in Plumbing Estimates and Contracts, from which work I will again quote freely, as it puts the matter as concisely as I can state it:

Estimating Catch Clauses.—In many specifications the estimator will find paragraphs to the effect that a certain well-known first-quality fixture or one "equally good" will be required, and he is at a loss how to estimate under the circumstances.

The question which naturally arises in his mind is, what will the architect consider "equally good?" Sometimes such a condition is innocently or ignorantly inserted in a specification instead of specifying two or more makes of goods, any one of which will be acceptable by an architect

who wishes to give his client the benefit of competition but does not know just how.

More often, however, it is a catch clause, inserted to give some one the benefit in estimating. If the favorite is awarded the contract a cheap grade of goods can be substituted as "equally good" instead of better quality and more expensive fixtures specified as a standard. Should, on the other hand, some competitor who was not approved by the architect be awarded the contract, no matter what he estimated on, or how good the quality of goods offered, they would not be accepted because they were not, within the architect's understanding, up to the standard or "equally good" as those specified.

Verbal instructions before the contract is let, that a certain sample submitted will be acceptable, cannot always be depended upon unless a note to that effect is made in the specifications; consequently, the plumbing contractor, in order to protect himself in such cases, must estimate on furnishing the goods actually specified, not something equally good." It is better to lose the contract without losing money than to be awarded the contract and lose money.

Another form that catch clauses sometimes take is not to specify any certain make of goods, but to call for certain articles of a kind to be approved by the architect. Such a condition in a specification is hard to estimate on. For instance, in places where rough-body, iron-wheel, hard-seat globe valves are generally used the architect might insist on finished nickel-plated brass gate valves with wooden wheels. Usually, when such a clause is made part of a specification, the architect or his representative is too busy to pass upon the quality of the work before the contract is awarded, and the estimator has absolutely no information that will guide him in arriving at a price. Under such conditions the only alternative is for the estimator to figure on using a quality and kind of fitting or fixtures that will protect himself no matter what goods the architect might call for.

There are many such little catch clauses worked into some specifications, and the more of them present the more careful must the estimator be. There is no reason why anything in a plumbing specification should be left open for future decision or should be left vague or indefinite. It is an easy matter to state just what material will be required, or several of like material, any or all of which will be acceptable. Where an architect sees fit to do otherwise he might be innocent in his intention, but the estimator must judge by the wording of the specifications and, to protect himself, figure on the most expensive material that can reasonably be insisted upon.

The only way to eliminate those objectionable "salvation-clauses" and "catch-clauses" from specifications is to gain the co-operation of the architects: get them to see the injustice of them and join the Master Plumbers' Association in condemning them. Then when an architect makes use of one of those unjust means for putting a plumber at a disadvantage, those who are estimating on the work join in asking that they be stricken out. In case he refuses, let the secretary of the association, ex-officio take the matter up with the owner, point out just what the significance of such a clause is, how it operates to the disadvantage of both plumber and owner alike, and the action taken on the matter by the architectural and plumbing associations. It will take only a few "calls" like that to place the matter in the position where it belongs.

(To be continued next week.)

Springfield, O.—The Mitchell Plumbing Co. has changed its name to the Victor Plumbing Co.

A SIMPLIFIED LAVATORY.

By W. H. Wakeman.

The lavatory in our manual training school contains a double cast iron sink 24 feet long. It was formerly fitted with 22 double fuller cocks, in which hot and cold water were mixed, to secure the desired temperature for washing purposes. This arrangement provided 44 outlets to be opened and closed, also to be "monkeyed with" by a host of mischievous boys. It was not

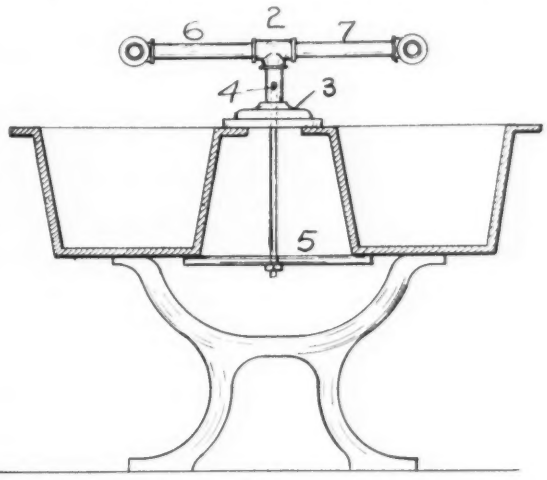


Fig. 1.

uncommon for them to use so much water that other parts of the building were left without their necessary supply.

Hot and cold water pipes were laid under this double sink, and in order to provide proper outlets 44 tees were required with a lead pipe connection for each. For five or six years this device was satisfactory, giving good service and requiring but little attention, then it began to fail and for a long time was a source of annoyance and expense.

Finally the whole device for distributing water was removed, and perforated brass pipes installed for the same service. Fig. 1 is an end elevation of the double

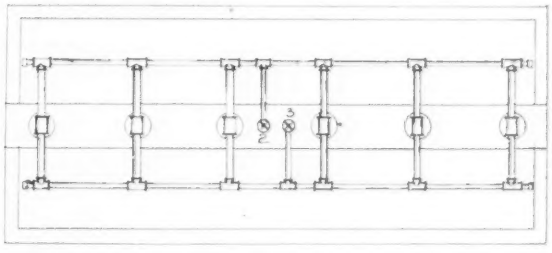


Fig. 2.

sink, illustrating the device used for holding the brass pipes in place. A ¾-inch galvanized iron tee, 2, is supported by a nipple that is screwed into a floor flange, 3. A hole was bored through this nipple, also through a ⅝-inch rod near one end. The rod was inserted in the nipple and a rivet put in at 4. A thread was cut on the lower end of this rod, to receive a hexagon nut. A piece of second hand 1¼-inch pipe with a suitable hole bored at the middle, was used at 5 and tightening the nut holds the support firmly in place. As this part is not

readily seen, no special effort was made to secure a smooth finish, but it was made substantial.

Other nipples were screwed in at 6 and 7 with a tee on the end of each. The perforated brass pipe was simply passed through these tees. Six of these supports were used as illustrated in the plan, Fig. 2. The outer ends of these brass pipes were capped, and water is discharged from each through 17 holes ⅛ inch in diameter. This is sufficient for washing purposes, and it does not eliminate the supply for other departments. If sanitary rules were complied with, this water would only be

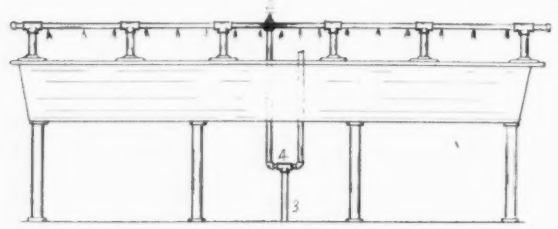


Fig. 3.

used as it flows from these 34 holes, but in practice the sink is about one-half filled, everybody washes in it, and then the outlet to the sewer is opened.

Two Jenkins angle valves are shown at 2 and 3 in Fig. 2, each one of which controls the supply to one part of the double sink. One of them is shown at 2 in Fig. 3, and the other is a duplicate of it. This demonstrates that two angle valves, which are very simple in design and easily repaired, were substituted for 44 cocks, and they answer the purpose perfectly. The supply pipe is also illustrated at 3 in Fig. 3. It is a single 1-inch pipe, with a ¾ x ¾ x 1 inch tee at 4, each outlet of which supplies one of the angle valves, and delivers enough for 17 streams.

Hot and cold water are mixed in another room, thus preventing all tampering with the supply by unauthorized persons. The device is illustrated in Fig. 4. The supply of hot and cold water is controlled by two globe valves, 2 and 3. They were adopted because they can

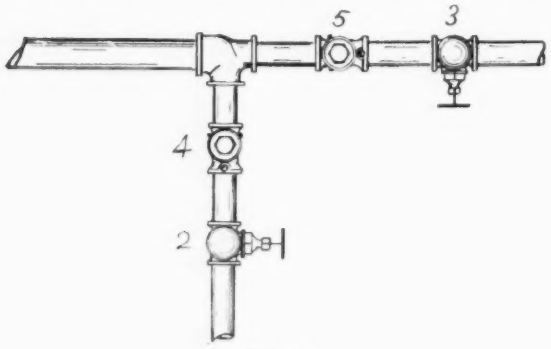


Fig. 4.

be easily adjusted to any requirement within their capacity, and their natural obstruction to the flow of water is not an objection in this case, because they allow more than enough to pass. Two swing check valves at 4 and 5 prevent hot water from passing into the cold water pipe, and vice versa. A ¾ x 1 x ¾ inch galvanized tee with the required nipples completes the device. It is satisfactory in every respect.

It is important that the pressure in these two pipes should be nearly the same in order to give satisfaction without requiring much attention. As one is hot and the other cold, it might be convenient in some cases to take the supply from different mains, but it is better to use from one only. In my case the water is heated by a special coil in an exhaust steam heater, thus giving a uniform temperature. The other is much colder in winter than in summer, but after the proper adjustment was ascertained to give the required temperature in the lavatory, it is necessary to change it only twice each year.

CONVENTION DATES.

June 10-13, 1912.—The twenty-fourth annual convention of the National Association of Master Steam and Hot Water Fitters, at Atlantic City, N. J. Headquarters will be established at the St. Charles Hotel. The officers of the association are: President, Edward B. Denny, Newark, N. J.; vice president, John T. Bradley, St. Louis, Mo.; treasurer, Juan A. Almirall, New York City; secretary, Henry B. Gombers, New York City; sergeant-at-arms, John C. F. Trachsel, Philadelphia.

June 24, 25 and 26, 1912—The eleventh annual convention of the State Association of Master Plumbers of California, at Lake Tahoe, Cal. The officers of the association are: President, Frank J. Klimm, San Francisco; vice-president; Edward W. Crowell, Los Angeles; treasurer, William F. Wilson, San Francisco; secretary, John L. E. Firmin, 101 Gough Street, San Francisco; executive members: Charles H. Julian, San Diego; William Rowe, Fresno; John Cahill, Sacramento; Thomas Haverty, Los Angeles.

June 25, 26 and 27, 1912.—The fourth annual meeting of the National District Heating Association, in Detroit, Mich. The officers of the association are: President, A. D. Spencer, Detroit, Mich.; first vice-president, Warren Partridge, Springfield, Ill.; second vice-president, R. D. de Wolf, Rochester, N. Y.; third vice-president, Cadwallder Evans, jr., Pittsburgh, Pa.; secretary-treasurer, D. L. Gaskill, Greenville, O.

July 9 and 10, 1912.—Meetings of the Eastern and the Central Supply Associations, at Atlantic City, N. J. Headquarters at the Hotel Dennis. Frank S. Hanley, 261 Broadway, New York City, is secretary of the Eastern Supply Association, and Paul Blatchford, New City Hall Square Bldg., Chicago, is secretary of the Central Supply Association.

July 11 and 12, 1912.—The summer meeting of the American Society of Heating and Ventilating Engineers, in Detroit, Mich. The officers of the society are: President, Professor John R. Allen, Ann Arbor, Mich., vice-president, John F. Hale, Camden, N. J.; second vice-president, E. T. Capron, Chicago; treasurer, Jas. A. Donnelly, Brooklyn; secretary, W. W. Macon, 29 West 39th Street, New York City.

July 12 and 13, 1912. The Colorado Master Plumbers' Association will hold its convention in Cheyenne, Wyo. This association includes master plumbers of Colorado, New Mexico, Wyoming and Utah. The president of the association is Chris. Irving, 1525 Larimer St., Denver, Colo.

July 16, 17 and 18, 1912.—The 30th annual convention of the National Association of Master Plumbers, in Salt Lake City, Utah. The officers of the association are: President, Alfred C. Eynon, Canton, O.; vice-president, Frank J. Fee, New York City; secretary, Louis E. Deuble, 312 N. Market St., Canton, O.; treasurer, William McCoach, Philadelphia.

The Use and the Abuse of Fuel

By Reginald Pelham Bolton, Past President of the American Society of Heating and Ventilating Engineers. Read at That Society's Annual Meeting in in New York City, January 23-25, 1912

The subject of fuel is of fundamental importance to the heating engineer, and the economic utilization of available materials constitutes a most important part of the service of our profession, not only to our own clients, but to the community.

The use of fuel in the northern portions of our country is of vital importance, not merely to our industries, but to human existence during the occurrence of low temperatures, and any increase in its cost, or any shrinkage in its supply directly affects the comfort, and even the conditions of existence of a large proportion of the population.

A general advance has taken place during the year 1911 in the price of anthracite coal, upon the use of which fuel the metropolis is largely dependent, an advance probably to be followed by another increase during the current year. The lowest grade of anthracite has been advanced 10 cents per ton at the mine, constituting to the dealer a rise in cost of 15 per cent with equivalent increase to the consumer. These advances are indications of the gradual approach of the period of exhaustion of the supply of this desirable and advantageous form of combustible material, and point to the not distant time when the city of New York will be confronted with the dreaded infliction of a general dependence upon bituminous or "soft" coal.

The evils anticipated from this material are of such long standing in other communities as to warrant the disinclination to its use in this city. Its consumption in London had become a public nuisance as long ago as the fifteenth century, and its contribution, by reason of the ineffective methods employed in its combustion, to the unfortunate reputation of the British Metropolis for smoke-laden atmosphere, and its aggravation by the infliction of smoke-laden fog, has been universally appreciated, and feared.

As we must anticipate that in due course, hastened by present methods of extravagance in the use of anthracite, the use of soft coal may become the main source of heat supply in this city, it is a matter of general interest, to examine into any large cause, contributory to the unnecessary hastening of the situation.

The advance of modern improvements will no doubt gradually bring about better conditions in the combustion of soft coal so far as to reduce the nuisance of visible smoke, but it remains a fact that present extravagance in the use of fuel in this part of the country is not only helping to bring about the elimination of anthracite as a fuel, but, as in other parts, contributing unnecessarily to the eventual exhaustion of the accessible coal measures of all kinds in the East, a result which may eventually bring about the transfer to the West of our future industries, and perhaps of the larger part of the population of the country. These considerations indicate the desirability of serious reflection upon the need for the study of economic methods, and for the dissemination of information bearing upon the evils, present and future, of modern extravagance and recklessness in the use of the invaluable commodity with which nature has, to a not unlimited extent, provided us. Many of those to whom this subject is presented are apt to discount the urgency of the situation and its possible disadvantages to our successors, by reference to the availability of other materials for the production of heat. That other materials capable of utilization as fuels exist, and to a considerable extent, is true. Yet their use is not unaccompanied by waste of another kind, since their value for other purposes is greater than for that of mere combustion, and it is only when they take the form of a true waste product, incapable by reason of local or fixed conditions of more economic utilization, that they can be considered as proper substitutes for coal.

It is due to our effective, if perhaps indefinite appreciation of this fact, that coal is so widely applied to the exclusion of other apparently accessible sources of heat. The process is carried too far in some cases, as in that of the neglect to utilize the waste materials of cities.

Coal is, itself, more or less misplaced material. Its existence does not entirely coincide with the desirable location of great industries and with the developed situation of the greater centers of population. Its cost to such communities as that of New York, is therefore largely made up of artificial additions due to its removal and distribution to the place of utilization.

The fuel, for which we pay from $2.50 to $6.50 per ton, has cost at the place of production barely a third of the amount. But such circumstances of location and carriage, in view of the vast developments and economies in modern methods of transportation, cannot be debited with the whole responsibility for the fact that coal has within the past half century increased in cost. A bill for coals delivered at retail on Broadway in 1853, which I found among other papers concealed in an old building recently destroyed, shows that the prices of fuel to the consumer was in those days less than is the cost in the year 1912.

It has been due to some better application of known principles of draft and of furnace construction and proportion, that the smaller and cheaper grades of anthracite became utilizable, whereby advantageous use has been made in recent years of the rejected waste of earlier mining methods. The culm banks have, however, been diligently exploited and the product is no longer a waste material. The combustion of other cheap material may soon be forced upon our industries and power developments, by the shortage of the finer grades of fuel, which will be in necessarily higher demand as scarcity develops. Every indication thus points toward the desirability of advance consideration of the subject so vitally affecting our general welfare.

The alternative sources of present and future fuel for this part of the country probably lie in vast peat and lignite deposits of the East and South. But the use of some lower grades of fuel will require reconsideration of existing practices, re-arrangement of appliances and reconstruction of much of the fixed apparatus now in use.

Further development of the gas engine will contribute more directly to the effective utilization of such materials since it has been demonstrated that lignite, the heat value of which is not more than 75 per cent. that of coal, may be made to afford equivalent power by means of the gas producer.

These and other materials may be utilized ere long in substitution for the cheaper grades of coal, but such use will be accompanied by large costs of necessary ap-

pliances and some increasing complexities of operation.

The observant heating engineer, traveling over this country, is naturally impressed by the opportunities for the utilization of local materials for combustion, and sometimes observes incongruous conditions accompanying the apparently unnecessary use of coal. In the wooded districts, vast quantities of unused lumber rot on the ground, and along rivers and on the sea coast driftwood and wreckage litter the shores. Such materials are little utilized, though driftwood is sold in New York City at $6 a barrel, and small oaks and hickory cut to length brings $16 to $19 a cord.

In portions of the country where peat could be had for the cutting, coal is brought to be burned, and I recently saw the waste of a woodworking factory being dumped into a fill, in a mill using bituminous coal at $3.50 per ton.

Natural gas can be obtained at so low a price as 30 cents per 1,000 cu. ft. even as far away from its source of supply as Buffalo, yet soft coal is being consumed and ineffectively, with much accompaniment of smoke in that vicinity.

The wastage of one industry or process may be capable of supplying the fuel of a lesser, if properly applied, but it is not to be forgotten that waste materials are possibly capable of utilization in better form than combustion.

In the Northwest, millions of tons of straw and cornstalks are burned locally, and in the South vast quantities of cotton shells and fire, capable of use either in the production of food materials or paper.

Neglect of one large opportunity is taking place in this and in many other cities, due to their failure to utilize the waste materials of the community, which are disposed of by common expense instead of being made the means of effective heat production. Under proper furnace arrangements, the rejected ashes, which contain a considerable percentage of unburned carbon, combined with the waste wood and paper, can be utilized effectively with the garbage of a city, to contribute more than the cost of the collection, in providing power for other purposes. The waste materials of a city the size of Havana would, under proper conditions, afford power for all municipal water pumping and sewage disposal.

The waste materials of the Borough of Manhattan, with a population of approximately 2,300,000 persons, is annually:

Of light, inflammable refuse.....	2,100,000 cu. yd.
Of ashes	3,000,000 cu. yd.
Of garbage	220,000 cu. yd.

The ashes contain approximately 20 per cent. of unconsumed carbon, representing a heating value equivalent to..... 168,000 tons of coal

The annual value of which is.....$504,000

To which may be added the cost of disposition at 45c per yard... 270,000

Making a total of.....$774,000 per annum

This large proportion of wasted fuel is due to the negligent methods of operation of domestic fires, to inefficient settings and proportions of boilers and furnaces, and to ineffective drafts for complete combustion.

With all the accumulated information of past experience and with all the improvements of the present day, the economics of combustion of fuel are not widely understood, and are little practiced. We find throughout this city today, comparatively few steam-generating boilers properly set, and many unprovided with proper draft for the fuel which is used. With a multitude of inventions and devices for so-called smoke-prevention, the simple principles of furnace construction, of proportion of grate to rate of combustion, of proportion of air supply and the advantages of high furnace temperatures, are neither understood by or taught to the man who handles the destruction of this valuable material, from the use of which are derived most of our comforts, our industries and our transportation.

A special obligation lies upon our Society, as representing engineers engaged in the art of heating, to impress upon the public, and in particular, upon the users of fuel, a better understanding of these fundamental facts and principles. An immense amount of printed matter has been devoted to the description of appliances connected with the distribution of heat, but much less has been done to educate the consumer in the economic utilization of the heat in the fuel for which he pays.

The waste and carelessness exhibited in this direction and the ignorance of the class of men employed in the combustion of fuel are factors which have hastened the development of central heat, light and power services.

It is inevitable that as time proceeds and the supply of conveniently available fuel becomes scarcer, accelerated by the volume of demand, increased by reckless wastages, the community will depend almost exclusively upon centralized and economically operated centers of heat, of light and of power production. It is natural that the course of economic developments should take this direction.

The economies in which it is difficult at present to interest the consumer of fuel become of commanding importance to a great industrial center of heat and power production. We have only to compare an average small steam engine and boiler in the isolated plant, using up coal at the rate of 10 lbs. for the production of a kilowatt-hour, with the latest addition to the electrical generating plant in the Waterside station of the New York Edison Company, giving the same unit of force, for a destruction of less than 15 per cent of that amount of fuel.

But while this process is in course of development, it is none the less necessary to impress upon the public mind the fact that the main source of artificial heat lies in the coal supply of our own country and that this is not an unlimited amount. Beyond its exhaustion lies the use of materials of limited value and also of limited amount, or a dependence upon developments of mechanical or chemical methods, involving expense and uncertainty such as we should reject, and perhaps resent, if offered or required as a substitute for the simple service of coal. Let us remember that for every ton of coal taken out, about an equal amount is necessarily abandoned in the mine; and that a large amount of available lumber is also destroyed or abandoned in the same process of extraction. Every year's working of the coal measures increase the difficulties of coal winning, and adds to its cost.

The best available information at this date limits the accessible supplies of coal, at our present progressive rate of consumption, to one hundred years, and the precedent conditions thereby brought about may be experienced by the children of some of us here present. The time must inevitably come when legislation will restrict the right of the individual to waste fuel, in any direct and eventually even in any indirect manner, and we may well imagine that the work of the heating engineer will at that time become of prime importance to the welfare of the nation.

There is a final element in the production of coal which should make a special appeal for recognition of the evils of its unnecessary waste. The cost of coal is not paid in money alone, but in an inevitable price of human life and

of injury to our fellow creatures. The terrible percentage of the loss of life to the tonnage raised, which obtained in the past, has been ameliorated only in the mere proportion which the number bears to the increasing tonnage raised, and not in the aggregate. It remains a fact that about two thousand lives are sacrified each year in the production of the five hundred and fifty millions of tons of coal which we partly use and which we partly waste; and that five thousand persons, most of them hard-working men having others dependent upon their labor, are maimed and injured.

In the homes of this city alone, in which upward of six millions of tons of coal are annually burned for the comfort of their occupants, the effect of three millions of tons of which is largely thrown away, the waste represents a loss of ten human lives, while the annual coal consumption of Greater New York has involved as its share of the annual loss of life 68 persons killed and 170 sorely hurt or crippled. For no other material in common use do we pay so dearly in human life and limb, yet in the use of no other material is so little care exercised, so little relative economy practised, so little educative method followed.

Coal is really a common possession, a heritage of the past to our present times, a priceless gift of ages of slow accumulation, which is disappearing not only by mere necessary usage, but also in great part by reckless and ignorant misuse. It should be thought a high crime against the community to contribute to the injury and deprivation of our children whose welfare is bound up in the provision which nature has made for our own and for their benefit.

Surely, considerations such as these should specially impress every heating engineer and point to the duty that lies upon us, of aiding in every way the elimination of preventable and useless waste and the utilization of every opportunity for economy in the material which constitutes the main support of our industries, one of the main sources of the country's wealth and the best means of maintaining the habitable character of much of the most desirable part of this country.

THE PROBLEM OF SCHOOL ROOM VENTILATION.

Dr. C. Ward Crampton, director of Physical Training in the New York public schools, gives the following interesting facts regarding the problem of school room ventilation in that city and the efforts being made to remedy faulty heating and ventilating systems:

"Two years ago, before the present popular agitation began, it became evident to me that many of the classrooms were overheated and that the then existing temperature standard of 68 degrees to 72 degrees F. was too high. Not only was it too high, but temperatures of 76 degrees and 78 degrees were common. Accordingly, the standard classroom temperature was lowered to 65 degrees to 68 degrees F., and the gymnasium temperature to 60 degrees to 65 degrees F. This naturally diminished the overheating, but it has not eliminated it.

"The agitation against our present mode of forced ventilation is mainly, if not wholly, the result of observations of these overheated classrooms and of some classrooms where defective apparatus is delivering but little fresh air. No one who has taught in or observed a classroom at its proper temperature, 65 degrees to 68 degrees F., with the plenum systems working properly, has ever complained to me that the ventilation was poor, for it was not poor.

"The overheating is due, as a rule, to defective diaphragms in the direct radiation control and to other failures of the thermostat control. The occasional failure of the fan and duct mechanism is due to faulty control or lack of much-needed repairs.

"The worst-ventilated rooms in the city, where I have found the air actually foul, are in the old buildings where we do not have plenum systems and the windows are relied upon exclusively for fresh air. It is evident that window ventilation can never furnish sufficient air for from 40 to 60 children in a room without some of the children being subjected to dangerous drafts of cold air. The result has always been that drafts are avoided and the air becomes bad.

"The faults I find with the present systems are as follows:

"(1.) They are not automatic. It requires constant expert care, testing and renewal of important parts which quickly deteriorate. This is a matter which should be taken up most seriously by members of the heating and ventilating profession. We cannot afford, it is clear, to pay more money for expert janitorial services, and while, in the main, the janitor engineer is expert and vigilant, yet there cannot fail to be exceptions. I maintain that there should be devised systems of automatic control that are really automatic and should not depend, to the present large degree, at least, upon human variability.

"(2.) The present heating and ventilating systems often decrease the relative humidity of the air down to a point from 10 per cent to 30 per cent, which I consider deleterious. This can be corrected by evaporating pans, steam jets or mechanical fragmentation of water. At the present time, experiments of the various methods of humidifying the air are being conducted by C. B. J. Snyder.

"There has been some talk about the physician being unable to set standards for ventilation. If you can guarantee a temperature of from 65 degrees to 68 degrees F. and an even relative humidity of from 45 per cent to 55 per cent, and a sufficient volume of fresh air (in accordance with present standards) mildly stirring about the room, I shall be satisfied.

"I look to the future to improve ordinary outside air and make it mildly stimulating by the change of some of its O^2 and O^3. At present the difficulty with ozonizing apparatus is to secure constant results, and I am frankly in doubt exactly what percentage of ozone is desirable, on account of the present difficulties of control of supply. With this condition remedied, we shall be able to set standards for this new and comparatively unstudied factor in ventilation."

Maybe He Needed an Up-to-Date Water Supply System.

Bill—"Has your opponent shown his hand yet?"
Jill—"Yes."
"Well, what do you say now?"
"I say the hand needs washing."—Yonkers Statesman.

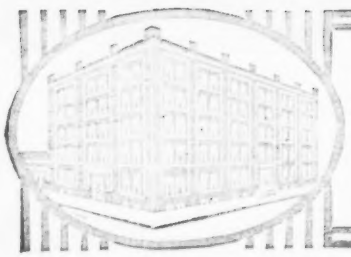
Differs from Roosevelt.

Judge—You have been here twice before, and twice I have sent you to jail. Have you anything to say why I should not send you there again?

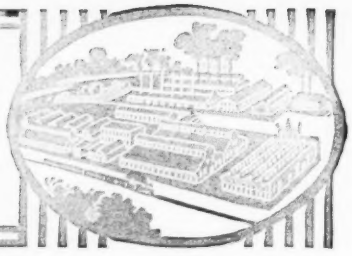
Prisoner—"I have scruples against a third term, your honor."—Judge.

"Do you take this man for better or for worse?" asked the minister.

"I can't tell until I have had him for a little while," returned the bride.



News of Interest Among the Wholesalers and Manufacturers



ATLANTIC CITY MEETINGS OF THE EASTERN AND CENTRAL SUPPLY ASSOCIATIONS.

The Eastern Supply Association and the Central Supply Association will hold separate and joint meetings at Atlantic City, N. J., on Tuesday and Wednesday, July 9th and 10th, with headquarters at Hotel Dennis. The executive committees of the associations will hold meetings on Tuesday, July 9th. On Wednesday morning, July 10th, there will be separate meetings of the associations, and in the afternoon the joint meeting of the associations will take place. Frank S. Hanley, secretary of the Eastern Supply Association, advises members, who plan to attend these meetings, to make their hotel reservations as soon as possible.

WILL MANUFACTURE HEATING SPECIALTIES.

The Chicago Heating Appliance Co., of Chicago, has been incorporated with a capital of $200,000, to manufacture heating specialties. The incorporators are: Drury F. Livesay, Fred W. Lorenz and Maurice J. Golan.

NATIONAL STEAM SPECIALTY CO. TO MANUFACTURE THE "B" HEATING SPECIALTIES.

The National Steam Specialty Co., 8-10 South Clinton Street, Chicago, has purchased the sole right to manufacture and sell the "B" heating specialties, formerly manufactured by the Bottum Valve Co., 162 North Dearborn Street, Chicago. The transfer took place June 1st.

THEIR BUSINESS A SUCCESS FROM THE START.

The Cornelius-Hogg Co., which opened for business on Tehama Street, near Third Street, San Francisco, Cal., a few months ago, has enjoyed a most promising business from the first owing to their live methods of going after the business. They manufacture plumbing specialties and have six representatives showing their line throughout the Coast territory, including Arizona.

GERSTEIN BROS. & COOPER BUILDING NEW FACTORY.

Gerstein Bros. & Cooper, South Boston, Mass., manufacturers of copper boilers, expansion joints and special copper work, who started business seven years ago in very modest quarters at 31 West First Street, have succeeded in creating such a demand for their products, that they are now in need of larger quarters. To provide adequate facilities the successful firm is now erecting a new factory of brick construction, three stories, 40x90 feet, at 1-3 West Third Street and 34 Athens Street, including a gas engine driven power plant. When completed and equipped the new plant will provide the firm with three times its former manufacturing facilities.

PERSONAL MENTION.

Ward Hillman has just been appointed manager of the Consolidated Engineering Co's. branch office at Indianapolis, Ind.

* * *

J. A. Ruthemeyer has secured a position on the selling force of the Richter Co., of Cincinnati, O. His territory will include the plumbing trade in Southern Ohio, Northern Kentucky and Eastern Indiana.

* * *

A. K. Aitkin, advertising manager of the Trenton Potteries Co., Trenton, N. J., manufacturers of porcelain bath tubs, lavatories, toilets, etc., has recently been calling on the jobbers in San Francisco and conferring with his company's representative, Michael Howard, in that city.

* * *

J. G. F. Squires, sales manager of the Canfield Rubber Co., of Bridgeport, Conn., has been calling on the plumbing supply houses on the Pacific Coast. Mr. Squires started his visit at Los Angeles where he attended the big Shriner convention recently.

* * *

L. A. Cornelius, president and founder of the Wolverine Brass Works, of Grand Rapids, Mich., has just concluded a most pleasant visit to California. Being an enthusiastic Shriner, he attended the Shriner convention at Los Angeles and then proceeded to the Yosemite National Park where he was met by A. S. Lamond, of San Francisco, Coast manager for the company. After a few days spent in this great park, Mr. Cornelius went to San Francisco. He was greatly pleased with the progress of his company on the Coast, and pronounced the future prospects exceedingly bright. He was accompanied upon the trip by Mrs. Cornelius and Franklin Cornelius, his son.

THE NEW WERNER CO. SECURES EXPERT COMPILER AS MANAGER FOR ITS TRADE CATALOGUE DEPARTMENT.

Chas. Desormoux, who is well known as an expert compiler of trade catalogues of plumbing and heating goods, has been appointed manager of the trade catalogue department of the New Werner Co., of Akron, O. The company is to be congratulated on this valuable acquisition, which will enable it to specialize on high grade work in catalogues for the plumbing and heating trades.

THE CONTINENTAL FOUNDRY CORPORATION ORGANIZED.

The Continental Foundry Corporation, of Fort Madison, Iowa, headed by F. L. Ostrander, of St. Louis, Mo., has been organized with a capital stock of $250,000 and has purchased a plant at Fort Madison, covering a tract of five acres, located on the Burlington, Santa Fe and Rock Island railroads. This

plant is now being equipped to manufacture a full line of heating boilers and radiators, and it is expected to have it in full operation by September 1, 1912. Its location not only affords excellent rail and river shipping facilities but it will also enable the new corporation to obtain cheap power from the $25,000,000 dam now being constructed on the Mississippi River.

THE PASTEUR-CHAMBERLAND FILTER CO. MOVES INTO NEW PLANT.

The Pasteur-Chamberland Filter Co., of Dayton, O., has just moved into larger quarters at 818-820 Monument Avenue in that city. This move was necessitated by the constantly increasing demand for the company's product. The new building contains three times the floor space of that occupied in the old factory, and the company has now ample facilities to make it possible to give all orders prompt shipment.

ANNUAL MEETING OF THE MANUFACTURERS AND DEALERS' PROTECTIVE ASSOCIATION.

At the annual meeting of the Manufacturers' and Dealers' Protective Association, held last week at the office of Secretary F. R. Huntington, 20 Broad Street, New York City, the following officers were elected for the ensuing year: President, William M. Seymour; vice-president, John S. Simmons; second vice-president, G. D. Dorsey; treasurer, L. O. Koven; secretary, F. R. Huntington; assistant secretary, H. M. Brunner; board of trustees: W. M. Seymour, J. S. Simmons, G. D. Dorsey, L. O Koven, Joseph Keeler, E. E. Haff, F. A. Bucknam, Walter S. Gibbs, Martin Behrer, George W. K. Taylor, Robert F. Seiffert, Thomas M. DeLaney and William J. Myers. The results of the work for the past year have been most satisfactory to the members at large. Through the efforts of the association about 15,000 claims have been adjusted satisfactorily, involving about a million and a quarter dollars, of which $470,000 was handled directly through the secretary's office. During the past year many disputed claims were also adjusted through his office and by the executive committee. In both cases the association was enabled to overcome extended litigation and unnecessary delay, and also succeeded in maintaining amicable business relations between the debtor and creditor.

PROGRAM FOR THE CONVENTION OF THE NATIONAL DISTRICT HEATING ASSOCIATION.

The Fourth Annual Convention of the National District Heating Association will be held in the city of Detroit, Michigan, on Tuesday, Wednesday and Thursday, June 25, 26 and 27, 1912. The headquarters and place of meeting will be at the Cadillac Hotel of that city.

The program for this convention is substantially as follows:

First Session, Tuesday, June 25, 10 a. m.

Address of Welcome. Response. Presenting applications for membership. Election of members. President's address. Report of executive committee. Report of secretary-treasurer.

Second Session, Tuesday, 2 p. m.

Report of Meter Committee, by A. P. Biggs, Detroit Edison Co., Detroit, Mich., Chairman.

Paper—Common Sources of Trouble in Customers' Installations, by Wm. E. Darrow, Merchants Heat and Light Co., Indianapolis, Ind.

Paper—Quality of Steam as Served by Central Stations to Its Customers, by A. C. Shepherd, Cleveland Electric Illuminating Co., Cleveland, Ohio.

Third Session, Wednesday, 9:30 a. m.

Nomination of officers.

Election of officers.

Report of Committee on Rates, by R. D. DeWolf, Rochester Railway and Light Co., Rochester, N. Y.

Paper—An analysis of Heating Rates, by A. E. Duram, Central Station Engineering Co., Chicago, Ill.

Report of Committee on Central Station Records, by H. R. Wetherell, Peoria Gas and Electric Co., Peoria, Ill.

Fourth Session, Wednesday, 2 p. m.

Paper—Heating in Connection with Steam Turbines, by A. H. Kruesi, Constructing Engineer, General Electric Co., Schenectady, N. Y.

Paper—Description of Combined Heating, Refrigerating and Power Plant of Murphy Power Company, by J. F. Lewis, Manager, Detroit, Mich.

Fifth Session, Thursday, 9:30 a. m.

Paper—Description of a Large Hot Water Heating System, by G. E. Chapman, Public Service Company, Chicago, Ill.

Paper—Sectional Steam Heating in Chicago, by S. M. Bushnell, Public Service Company, Chicago, Ill.

Sixth Session, Thursday, 2 p. m.

Paper—Depreciation in Underground Distribution Systems, by Wm. Jennings, Harrisburg Steam Heat and Power Company, Harrisburg, Pa.

Paper—Economic Survey of Combined Power and Heating Plants, by E. D. Dreyfoos, West Penn Company, Pittsburg, Pa.

Symposium—Description of Underground Insulation, by a number of manufacturers of same. This description as presented by the manufacturers will be discussed by the users.

The entertainment as provided for the convention will be elaborate. One thousand dollars has been appropriated for the entertainment of all attending. On Tuesday, June 25th, there will be an auto ride for the ladies, and theater party in the evening at Temple Theater, for all. On Wednesday the sessions will be held upon a palatial steamer, and trip made from Detroit to Port Huron and return. On Thursday, card party has been arranged for the ladies and auto ride, as time will permit.

The entertainment committee is composed of the following gentlemen: J. F. Lewis, Chairman; J. V. Redfield, J. T. Bordley, R. J. Kerchner, H. F. VanValkerburgh, R. W. Symes, A. P. Biggs, F. W. Herendeen, W. M. Moore, E. E. McNair, all residents of Detroit.

SPRING TOURNAMENT OF THE EASTERN TRADE GOLF ASSOCIATION.

The Spring tournament of the Eastern Trade Golf Association, which was held on the course of the Forest Hill Field Club, Newark, N. J., Thursday, May 23rd, was a most successful outing in every respect.

Thirty-six players participated in the day's program which consisted, in the morning, of an 18-hole medal-play handicap.

Arthur McGonagle was the winner and received a sterling silver cup, presented by the association.

W. W. Hubbard was the winner of the Second prize, a silver cup, presented by the association.

Geo. M. Scott was the winner of the third prize receiving a silver trophy, the gift of the association.

In the match play against Bogey, F. J. Oliver was the winner, finishing 5 down to the Colonel and received a beautiful porcelain cup decorated with gold, presented by the Potteries Selling Co., Trenton, N. J.

In the afternoon, in the Best-ball foursome, P. M. Beecher, of Syracuse, and W. C. Matlock, of Trenton, proved

metal seat. The principle of the construction of this union the winners with a net score of 68, receiving two gold medals as prizes.

The low net 36-hole medal-play contest was won by Chas. N. Brizse, who was awarded a fine gold medal.

Luncheon was served on the wide veranda of the Clubhouse and at night players and gallery enjoyed a very fine dinner, when the prizes were presented.

In point of numbers it was the largest meet ever held, and it commemorated in a fitting manner the start of the tenth year of the association.

The complete scores follow herewith:

Regular 18 Hole Medal Play Handicap.

Name	Out	Inn	Total	Handicap	Net
A. McGonagle	51	42	93	21	72
W. W. Hubbard	61	50	111	36	75
P. M. Beecher	57	49	106	30	76
G. M. Scott	58	50	108	32	76
C. N. Brizse	58	38	96	18	78
B. I. Ashmun	51	43	94	15	79
J. B. Garfield	45	36	81	0	81
W. Bowers	65	47	112	30	82
G. A. Suter	64	55	119	36	83
J. Simmons	51	42	93	9	84
W. H. Burnett	46	50	96	12	84
E. H. Giles	57	52	109	25	84
A. S. Armagnac	58	39	97	12	85
E. C. Molby	52	45	97	12	85
P. H. Seward	58	49	107	20	87
R. B. Hunt	56	50	106	18	88
W. C. Marsh	60	44	104	15	89
F. J. Oliver	56	45	101	12	89
F. Yardley	61	48	109	20	89
S. Roberts	46	48	94	4	90
G. H. Bell	49	41	90	0	90
F. C. Jennings	50	40	90	0	90
H. S. Hadden	52	45	97	6	91
C. C. Hale	59	46	105	14	91
A. M. Josephy	50	44	94	3	91
L. Moore	74	52	126	30	96
C. S. Wood	70	53	123	25	98
F. F. Cooper	72	48	120	20	100
W. C. Matlack	73	55	128	28	100
H. R. Watson	70	56	126	25	101
W. T. Gilmour	71	61	132	30	102
J. A. Donnelly	80	58	138	36	102
W. G. LeCompte	73	59	132	30	102
M. E. Conran	75	55	130	25	105
F. K. Chew	71	75	146	34	112
W. R. Watters	95	69	164	36	128

Best Ball Foursome.

Names	Out	Inn	Total	Handicap	Net
P. M. Beecher & W. C. Matlack	51	45	96	28	68
W. H. Burnett & Jos. Simmons	45	34	79	9	70
A. McGonagle & R. B. Hunt	45	43	88	18	70
G. M. Scott & W. G. LeCompte	53	48	101	30	71
W. Bowers & E. H. Giles	47	50	97	25	72
C. N. Brizse & J. B. Garfield	42	32	74	0	74
C. C. Hale & E. C. Molby	48	38	86	12	74
L. Moore & G. A. Suter	56	49	105	30	75
F. J. Oliver & F. C. Jennings	42	36	78	0	78
C. S. Wood & F. F. Cooper	52	46	98	20	78
W. T. Gilmour & M. E. Conran	58	47	105	25	80
G. H. Bell & B. I. Ashmun	41	39	80	0	80
A. S. Armagnac & F. Yardley	51	42	93	12	81
H. R. Watson & W. W. Hubbard	58	48	106	25	81
F. K. Chew & J. A. Donnelly	57	59	116	34	82
W. C. Marsh & S. Roberts	49	39	88	4	84
P. H. Seward & H. S. Hadden	50	43	93	6	87
W. R. Watters & E. Lutes	85	56	141	36	105

The association will hold a special tournament on the course of the Atlantic City Country Club, Atlantic City, N. J., on Monday, June 10th, in connection with the annual convention of the National Association of Master Steam and Hot Water Fitters.

THE OPENING TOURNAMENT OF THE WESTERN TRADE GOLF ASSOCIATION.

The opening tournament of the Western Trade Golf Association will be held Thursday, June 13th, at the Wheaton Golf Club course at Wheaton, Ill. The association is comprised of members of the plumbing and heating supply trades of Chicago and vicinity. All men connected with firms in the business are eligible for membership. Secretary H. M. Sedgwick, of the S. Wilks Mfg. Co., 3519 Shields Avenue, Chicago, will be glad to give those interested full particulars upon request.

TWENTIETH CENTURY BUBBLING FOUNTAINS.

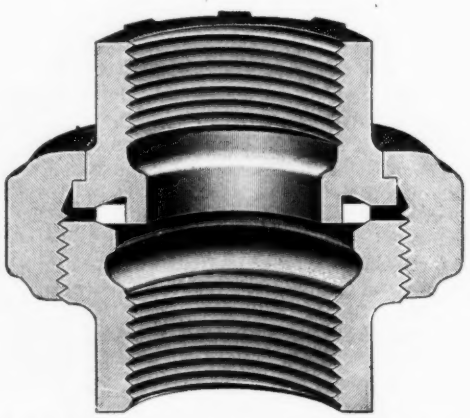
The M. H. Foundry & Mfg. Co., of Belleville, Ill., are calling particular attention to their fountain De Luxe illustrated herewith. The manufacturers call special attention to the sanitary features of this drinking fountain as

The M. H. Drinking Fountain De Luxe.

follows: Glass receptor, Porcelain top, Automatic closing and Regulator in front to adjust flow. This and other products of the M. H. Foundry & Mfg. Co. have been meeting with vast favor in the trades. Many new styles of drinking fountains and other products of the company are illustrated in their Catalogue "E."

THE COMPRESSION DISC PATENT UNION.

The Illinois Malleable Iron Co., 1801-1825 Diversey Parkway, Chicago, has just placed on the market an entirely new brass and iron union under the name of the Compression Disc Patent Union. This union, which is shown herewith, is made of the very best quality of air-furnace malleable iron, and it is made extra heavy so that it will stand as high



Sectional View of the Compression Disc Patent Union.

a pressure as unions of this character are subjected to. A noteworthy feature of this union is the brass valve-seated disc. A careful look at the illustration shows that the face of each threaded section of the union is beveled to receive the brass disc, and the act of connecting up the union, that is screwing up the union nut, compresses the brass disc against the iron seats and thus makes a permanent steam

is essentially that of seating a valve, and hence it is named the Compression Disc Union. These unions are all tested by air under water before leaving the factory, and they are guaranteed to be first class in every respect. Interested parties can obtain full particulars upon request to the manufacturers, the Illinois Malleable Iron Co., Chicago.

ADVANTAGES OF THE GRAHAM INSTANTANEOUS WATER HEATER.

The Graham Instantaneous Water Heater Co., Erie, Pa., is presenting to the trade a product of exceptional merit. The Graham instantaneous water heatear is a complete, instantaneous and automatic water heater in itself, requiring no tank or any additional device which requires constant consumption of gas for its operation. The accompanying illustrations show this water heater as it appears when set for operation, also its interior mechanism. The simplicity of construction of the Graham heater should appeal at once to the average person, for without simplicity absolute reliability is impossible. The

The Graham Instantaneous Water Heater, Open and Closed.

manufacturers of the Graham heater make the foregoing statement on the grounds that the Graham does not depend upon thermostatic valves that have a tendency to become out of order.

In the plumbing trade it is readily recognized that an instantaneous water heater is no longer a luxury that can be enjoyed only by the rich, for at the price and cheapness that the Graham can be had and operated, puts it within the reach of the masses, and is by far the most economical method of heating water for domestic uses.

"AUTO-SILENT" CLOSET COMBINATIONS.

The C. T. Ham Mfg. Co., of Rochester, N. Y., are the manufacturers of "Auto-Silent" closet combinations which are arousing much interest and comment among the plumbing trade.

In a circular recently issued by them it is stated that every closet is guaranteed to save two gallons of water every time it is used, at the same time flushing stronger than others; that because of the automatic seat action, closet will flush equally well with seat up or down, making it especially desirable and sanitary for residence purposes, as well as factory or public buildings. In the circular are shown pictures of several modern buildings which are equipped throughout with "Auto-Silent" closet combinations.

In further setting forth the distinctive features of the "Auto-Silent" closets the manufacturers claim that the invisible tanks cannot leak, as they are always empty except

The "Auto-Silent" Closet Combination, Model No. 201-B.

at the time they are being flushed; that tanks can safely be plastered in wall, as they have no working parts, are practically indestructible, and are noiseless in operation.

The "Auto-Silent" Closet Combination, Model No. 203-B.

The accompanying illustrations show two of the many models of "Auto-Silent" closet combinations manufactured by the C. T. Ham Mfg. Co.

News of the Plumbing and Heating Contractors

Reports of the Week from Many Different Cities Show Both Business and Personal Activity in the Trade

NEWS FROM THE PACIFIC COAST.

San Francisco.

While the present year is still rather dull for business in general, the amount of building activity throughout California and the Pacific Slope country as a whole is much more noticeable than a year ago. The most encouraging feature of this is the fact that the buildings being put up are of a high standard. More and more is this region building for permanency and architectural beauty. Even factories and warehouses nowadays are built to look well from the outside. All this means increased cost of construction and a wider market for high-class building materials and furnishing equipment. In no department of the building trades are more modern accessories being employed than in the matter of plumbing, heating, ventilating and fire protection. The progressive nature of the sanitary and public safety regulations in most municipalities has been a great stimulus to the supply trade in these lines. And even where there are not the most modern provisions made for such equipment by the authorities, no building of importance is put up without allowing for the easy remodeling of the structure when the inevitable regulations will be in force. Local plumbing supply houses report a constantly growing market for all the modern plumbing conveniences. This growth is most marked in the country towns, as here the tendency is greatest to remodel old structures in order to enhance their rental value. Among the contractors there is some evidence that the individual firms are figuring more with the idea of legitimate profits than to land jobs at any sacrifice. They realize that there is no money in cut-throat competition, and while there are no trade agreements in force, yet a more stable condition seems to be evolving.

Local plumbing supply houses report a decided improvement in business this week. Big contracts are being let and as a consequence the contractors are buying material. The advanced prices on most all plumbing goods seem to have stimulated rather than curtailed the demand, but in reality the prices are not responsible. Buying is always more or less hand to mouth and just now it happens that more supplies are needed for contract work. Labor conditions in the plumbing, heating and ventilating trades are the best they have been for some months, yet none of the large contracting firms are complaining of too much work. All could handle much more than they now have. Figuring is very close and it is a mystery how certain firms are going to make profits on their present basis of figuring. The city regulations in the matter of plumbing and building requirements generally are being strictly enforced and there is very little chance for slighting jobs or substituting inferior materials. In fact all the work being done here seems to be of a high order and there is very little complaint about unfair work.

In accordance with their policy of keeping in the closest touch with the plumbing trade, the Mary-Lally Co., wholesale plumbing supply dealers, have just opened another branch establishment in California. This branch has started up at Fresno, the principal city in the raisin district of the San Joaquin Valley. The company also has a branch at Stockton, the largest city of the San Joaquin Valley.

The Pacific Blower & Heating Co. has been awarded the contract for the heating and ventilating work on the new grammar school at Oroville, Cal., amount, $3,800; and the heating and ventilating contract for the Congregational Church of the same city, amount, $1,600.

The Peterson-James Co. has been awarded the plumbing, drainage, ventilating and gasfitting work on the Hinds Estate building, five stories and basement, at Sixth and Natoma streets; amount of contract, $5,223.

The J. L. Bowen & Son Co. has been awarded the contract for the plumbing, sewering, gasfitting, hot water piping, etc., on the five-story Payne apartment house on Bush street and Grant Avenue; amount of contract, $6,042.

The heating contract on the Sierra Investment Co.'s building at Stockton and Sutter streets has been awarded to the John G. Sutton Co. Amount of contract, $1,520.

NEWS FROM WISCONSIN.

Fox Lake.—This city has voted to install a municipal waterworks system.

Madison.—More contracts for work on the state capitol, to the amount of $380,683, have been awarded by the state capitol commission. The heating and ventilation work for the great dome will be done by the Mueller company, of Milwaukee, who bid to do the work for $16,770.

Crystal Falls.—Plans for a $105,000 grade school building, to be erected here during the summer, are being completed by Derick Hubert, of Menominee. The plans will call for swimming pools, shower baths, and other work for the plumber and heating contractor.

Milwaukee.—The Central Heating Company has incorporated with a capital of $100,000. The incorporators are William F. Adams, S. J. McMahon and J. Gilbert Hardgrove.

Denmark.—Gajewaski Brothers, plumbers and electrical engineers, of Green Bay, have opened a shop in the building of Enz Brothers and are preparing for all kinds of plumbing, electrical and heating work.

Clinton.—Sam J. Pelz has opened a plumbing shop in this city, in the Woolston Block. Mr. Pelz was formerly employed in a local shop and is well known here.

Oshkosh.—Carl Marquart, a well known Oshkosh plumber, has been engaged by D. H. Burnham & Co., who erected the Old National bank building here, and has left for Boston, where he will have charge of a crew of plumbers, working on the erection of a $3,000,000 building.

NEWS FROM NEW ENGLAND.

Massachusetts.

Lee.—W. D. Bull of Lenox has been awarded the contract for the plumbing, heating and tinning of John Phelan's new business block on Main street.

Worcester.—During the summer season the school board will make repairs on 13 school buildings. In many of them extensive changes will be made in heating and ventilating systems.

Marlboro.—G. R. Hall & Co. has the contract for installing plumbing at the John Burnett place in Southboro.

Winchester.—The plumbing and heating of James D. Frazer's new residence on Beacon street has been awarded to Edwards & Poor Co.

Enfield.—Donahue Bros., of Springfield, has been awarded the contract to do the plumbing work on Mrs. A. L. Howell's new residence.

Worcester.—Bids have been received by the school board for heating and ventilating the Pleasant street school as follows: George R. Hall & Co., Marlboro, $5,666; W. W. Campbell & Co., Boston, $5,895; Pierce & Cox, Boston, 06,196; A. Burlingame Co., Worcester, $6,218; Thomas W. McManus, Worcester, $6,218; John J. Sexton, Worcester, $6,350; Central Supply Co., Worcester, $6,496. The contract has not yet been awarded.

Dalton.—The official board of the Methodist church has placed the contract for installing a steam heating system in the church, to the Robbins, Gamwell Co., of Pittsfield. The work will be done during the summer.

Lowell.—The H. R. Barker Mfg. Co., was the lowest bidder for heating and E. T. Shaw & Co., for plumb-

ing at Hose 10 fire house. The contracts have not yet been placed.

Williamstown.—Guy W. Nichols, who has been a member of the plumbing firm of Locke Brothers Co., for a number of years, has severed his connection with the firm and is to remove to Beverly. John B. Locke, a former member of the firm, will return and take Mr. Nichols' place.

Rhode Island.

Providence.—Bids for the construction, plumbing, heating, ventilating and other work of the addition to the Vineyard street school have been received and contracts awarded as follows: Heating and Ventilating: Allen Fire Department Supply Co., $11,731; Cox & Stone, $11,670; Samuel Jackson Co., Pawtucket, $15,474; H. B. Smith Co., $11,490; J. P. Dwyer Co., Boston, $11,600; Haslam Heating and Ventilating Co., Boston, $9,300; Bennis McCarthy, $9,652; William E. Doherty, $11,300. Awarding of contract postponed. Plumbing: John J. Shanley, $5,538; Edward J. Sullivan, $3,631; Dennis McCarthy, $4,209; Samuel Jackson Co., $5,981; M. F. Murphy, $4,120; D. F Holmes, $5,348; Tierney-Colgan Co., $4,600.

New Hampshire.

Portsmouth.—Robert J. Donnelly, who for several years has been a master plumber at the Portsmouth Navy Yard, has gone into the plumbing business on his own responsibility and has opened an establishment at Malden, Mass.

Maine.

Portland.—F. & C. B. Nash Company of this city has been awarded the contract for plumbing and heating a new school building to be erected by the town of Cape Elizabeth. Their bids were: plumbing, $361; heating, $1,381.

Presque Isle.—Benno Nadeau has opened a plumbing establishment at Mars Hill. Maxine Nadeau has been placed in charge.

Connecticut.

Hartford.—Frank D. Ellison will probably be awarded the contract for completing the plumbing of the high school. His bid was $9,150.

Waterbury.—Barlow Bros. Co. have been awarded the contract for plumbing and heating a garage to be erected on Woodlawn terrace for Paul D. Hamilton.

Shelton.—The Moulthrop-Wellington Co. has been organized and has opened a place of business in this city, to do all kinds of plumbing, heating, steam and gas fitting work. The firm is composed of L. E. Moulthrop and J. W. Wellington, the latter of New Haven.

Chesire.—J. B. White has opened a plumbing shop on Main street.

Fairfield.—The plumbing business of George Rock has been sold to Daniel McCoy of Bridgeport. The sale includes the stock, fixtures and good will. The business was established ten years ago by the late Daniel Rock.

NEW FROM PHILADELPHIA AND VICINITY.

Andrew Wanner, 3743 N. Bouvier Street, Philadelphia, is one of the busy men of this city. His latest contract is for the plumbing in twenty-five houses, S. W. side, at Judson and Cambria Streets, for J. M. Herns.

F. L. Hirsh, 1220 19th Street, Philadelphia, has the contract for additions and alterations to the plumbing at 2512-14 Ingersoll Street, for J. F. Thomas.

James Morris, 720 Rising Sun Lane, Philadelphia, reports business as being good. In connection with his large jobbing trade, he has contracts for the plumbing in ten new houses, 4943-61 North Warnock Street, for Wilson & Miller, owners.

The contract for heating the apartment house in Oak Lane, Philadelphia, for Thos. C. Bernard, has been awarded to M. J. Kennedy Co., 6013 Stenton Avenue.

Contract for the installation of heating systems in sixteen new houses at Lansdowne Avenue & Wanamaker Street, Philadelphia, for Peter McCurdy, has been given to H. L. Hurlburt.

C. E. Monday & Co., 1318 Olive Street, Philadelphia, are installing the heating system in the building at Recreation grounds, 26th & Jefferson Streets, also in the West Philadelphia High School.

J. H. Carvin, 2615 Girard Avenue, Philadelphia, will install the plumbing in twelve new houses at 3843-65 N. 19th Street, for H. Heist, owner; also in three new houses at 1449-53 Kerbaugh Street, for W. D. Frehn.

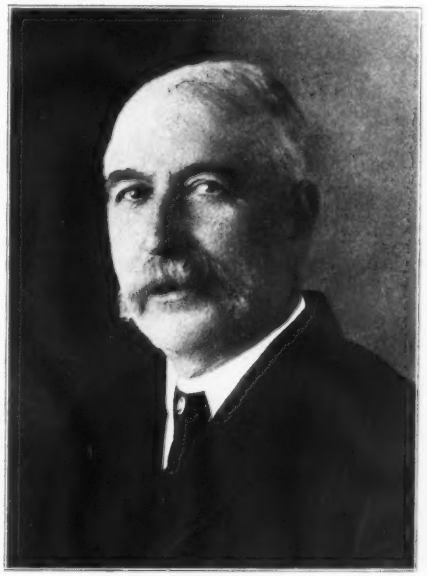
J. T. Louden & Sons, well known plumbers of West Philadelphia, have the contract to install the plumbing in the new residence at the corner of 38th & Spruce Streets, Philadelphia, owned by J. J. O'Connor.

Wm. N. Topham, one of the oldest established plumbers in Germantown, has the contract for the plumbing in the new residence of Jas. J. Schnitzins at Rittenhouse Street & Germantown Avenue, Philadelphia.

Contract for alterations and additions to the plumbing in the property owned by Jos. Zagorski at 4548-58 Stiles Avenue, Philadelphia, has been awarded to Wm. Grundy, 2107 Orthodox Street, Frankford.

Sheridan Cave, 6034 Market Street, Philadelphia, will install the plumbing in twenty new houses on 46th Street & Hazel Avenue, and 46th & Larchwood Streets.

Wm. Boal, one of the most prominent and progressive master plumbers of Philadelphia, is serving his third term



Wm. Boal, One of the Best Known Master Plumbers in Philadelphia, Who is Doing Good Service in the Select Council in that City.

as member of Select Council from the 41st Ward, Philadelphia. Mr. Boal has been located in Holmesburg for over twenty-five years. He served his apprenticeship with Richard W. Watson, of Philadelphia, in 1872 and continued in his employ until he went into business for himself.

NEWS FROM BALTIMORE.

Leonard O. Bean has opened an up-to-date plumbing establishment at 159 Belvedere Avenue.

Some of the most important plumbing work in the city is being done by James S. Barry who recently opened an establishment at 1814 N. Charles Street.

A new plumbing concern has been opened at 2048 Wilkens Avenue, by Edward C. Burns.

Arthur Hamilton, 506 W. 27th Street, is an ambitious journeyman who has recently entered the ranks of the master plumbers.

W. H. Herke, 1803 Guilford Avenue, has been granted a master plumber's license.

C. Fred Hutchinson has taken out the plumbing license for Hutchinson Bros., 5 South Howard Street.

A number of plumbing contracts in the state of Maryland have been secured by James L. Bateman, 3405 17th

Street, N. W. Mr. Bateman is one of the most progressive plumbers in this vicinity.

J. Clarence Browne, of Havre de Grace, Md., is a frequent visitor to the plumbing supply houses of Baltimore.

A new plumbing establishment has been opened at 1415 Jackson Street, by H. N. Bittle.

C. M. Bowers, 342 W. Preston Street, has taken out a plumber's license.

Joseph I. Curran has opened a plumbing establishment at 2651 York Road.

Contract for the plumbing in the new Industrial building has been awarded to Edward Munroe, of Govans.

A plumber's license has been granted to Frank Hutchins, a hardware dealer at 26th Street and York Road.

C. M. Frosberg has started a plumbing business for himself at 2010 Lombard Street.

John J. Holmes, 747 E. Preston Street, has recently taken out a master plumber's license.

Victor F. Lochte, plumber and gas fitter of 418 East Preston Street, has opened another establishment at 1543 Maryland Avenue.

E. L. Johnson has opened a plumbing shop at 2213 Pennsylvania Avenue.

George Walz, formerly in charge of one of Cuyler & Mohler's branches is now on the street for A. Weiskittel & Son Co., of Baltimore.

J. Parker Luckett has opened a plumbing, steam fitting and general repair shop at 1508 North Gay Street.

William F. Schwartz, one of the best known of the local plumbers, has returned to the city after a two years' absence in Virginia, and has purchased the building and opened a shop at 2213 Pennsylvania Avenue.

Keene & Murphy are the proprietors of a new plumbing establishment at 419 East Lexington Street.

Samuel T. Tillinghast, a well-known salesman of plumbers' specialties, is now at the head of his own establishment at 1729 Eastern Avenue.

Henry Miller succeeds Kraft & Miller at 2227 Essex Street as a plumber of quality. While making a specialty of plumbing he will do rooting, spouting, stove and furnace work as well.

Joe Walpert, for many years known as one of Baltimore's best journeymen plumbers is now at the head of his own shop at 1110 East Fayette Street.

Charles Scott, 1804 Greenmount Avenue, is working three gangs on sheet metal as well as plumbing work.

Charles Schaub, 501 Albemarle Street, has four important contracts in East Baltimore.

P. A. Sullivan has a new plumbing establishment at 2223 Guilford Avenue.

C. J. Putts, Jr., is a new master plumber. His place of business is at 826 North Fremont Avenue.

Nathan Osseroff, 10 North Exeter Street, is one of the well-known journeymen who recently secured a master plumber's license.

H. F. O'Neil recently opened a plumbing establishment at 917 Forrest Street.

Joseph C. Nolte is one of the promising journeymen plumbers who has recently secured a license and has opened a shop at 1739 East Lanvale Street.

Alex McCallum has opened a plumber's shop at Evergreen Lawn, in Hamilton, a suburb of Baltimore.

Woodyear Street is becoming a plumbing center. Patrick Mannion is the latest to open a shop there, and he is located at 823.

J. C. Kerchenmeister, an old time plumber of reputation, has taken out a license for a new shop at 3226 Fairmount Avenue.

Arthur Hamilton is an ambitious journeyman who has recently taken out a master plumber's license for 506 West 27th Street.

J. J. Gessler has opened a plumbing establishment at 1206 West Franklin Street.

M. J. Gorman has opened a plumbing shop at 324 East Lanvale Street, near the Guilford Avenue car line.

William Baer, 1440 Jefferson Street, has his new plumbing business in full operation.

Josh Griffith, 1202 William Street, has been granted a master plumber's license.

Allen W. Beam, of Baltimore, Md., has been elected president of the new Maryland State Board of Plumbing Examiners. He succeeds John Trainor, who was at the head of the board under the administration of Governor Crothers. Joseph Whatthe has been elected secretary, and Edward J. Burke, treasurer.

NEWS FROM OHIO.

Cleveland.—The Brainard Plumbing Co. has been incorporated with a capital of $10,000 to conduct a general plumbing business. The incorporators are John F. Wilson, M. M. Feidner, O. N. Brainard, Charles M. Selling and H. Z. Brainard.

Columbus.—The Director of Public Service has awarded the contract for the construction of a comfort station in Schiller Park to L. H. Hetrick & Bros. of Columbus, at $4,240.

CONTRACTS AWARDED.

De Pere, Wis.—Ruby & Warren have secured the contract for the installation of a modern plumbing system in the West Side Bank building.

Marion, Ill.—G. W. Carpenter has secured the contract for the installation of plumbing systems in twenty-four new houses in the Dilenbeck addition in Perry, Ill.

Dubuque, Iowa.—W. S. Molo has been awarded the contract for the plumbing and steamfitting in the school building, which is to be erected at Manchester, Iowa.

Pontaic, Ill.—Leroy Brewer and William Shaw have formed a partnership and opened a plumbing establishment in the Lord Block on Howard Street.

Pontiac, Mich.—L. J. Holser has been awarded the contract for the plumbing and steam heating of the new Waite Bros.' block on Saginaw Street, also the contract for the plumbing and hot water heating of the new dwelling on Woodward Avenue in Birmingham, now being built by Thomas Cobb, cashier of the First State Savings bank at Birmingham, and the plumbing of the new residence of James Couzens, manager of the Ford Motor Works, at Island Lake.

SOUTHERN WISCONSIN MASTER PLUMBERS ORGANIZE.

Forty master plumbers of southern Wisconsin have formed the Southern Wisconsin Master Plumbers' Benevolent and Sanitary Club at a meeting of master plumbers from the following cities in the southern section of the state: Janesville, Madison, Watertown, Stoughton, Monroe, Beloit, Broadhead, Clinton, Elkhorn, Delavan, Whitewater, Beaver Dam, Baraboo, Edgerton, Evansville, Mineral Point, Burlington, Walworth, Geneva and Darlington. The first meeting, at which the club was organized, was held in Janesville and the second meeting will be held in Watertown July 9. Several addresses were given at the meeting, including one by State Secretary F. E. Green. The following officers were elected: President, William McVicar, Janesville; vice-president, William Owens, Madison; secretary, Fred Baker, Evansville; treasurer, Daniel Osborn, Beloit.

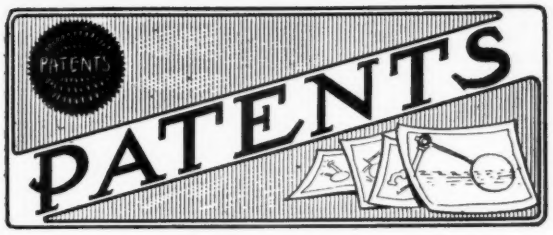
OBITUARY.

Edgar N. Carr.

Edgar N. Carr, a prominent steam fitter of Manchester, N. H., for more than a decade, died in that city a few days ago. Mr. Carr was forty-three years old and a native of Manchester. He had been in poor health for some time.

Walter Latimer.

Word has been received in Bridgeport, Conn., of the death of Walter Latimer, who was formerly in the plumbing business in that city, at Pernambuco, Brazil. Mr. Latimer was in business in Stamford, Conn., for a time, also, and a few years ago went to Brazil on a government contract.

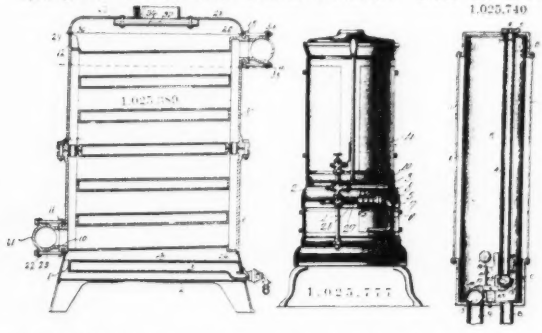


Plumbing Department.

1,025,389. Water-Heater. Otto Fox, Cleveland, Ohio, assignor to The Bryant Heater and Manufacturing Co., Cleveland, O., a corporation of Ohio. In a water heater, the combination of a series of heating elements, each element comprising a pair of substantially parallel vertically extending conduits with corrugated transverse ducts extending therebetween and of greater width than the conduits, said elements being placed side by side and the transverse ducts of adjacent elements being staggered, side walls coöperating with said elements and each provided with ribs projecting into the spaces between the adjacent transverse ducts, the vertical ducts at one side of the heater provided each with an inlet connection near its lower end and those at the other side of the heater being provided each with an outlet connection near its upper end.

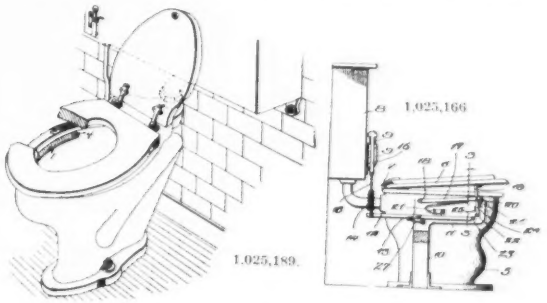
1,025,777. Instantaneous Gas Hot-Water Heater. Adolf Beler, Pittsburgh, Pa., assignor to Beler Water Heater Co., Pittsburgh, Pa. The combination with a spring closed gas control valve, a water actuated mechanism for actuating said valve, comprising a casing, a disk disposed in the open end thereof and provided with a concentric aperture therethrough, an expansible water actuated means carried by said disk within the casing and in communication through the aperture of said disk, a stem controlled thereby and projecting through the aperture of the disk, a cap for the casing providing a chamber at that end of the casing beyond the sealing disk and into which said stem projects, the water supply being connected to the casing through said cap, means for controlling the gas valve mounted concentrically at the opposite end of the casing and in operable relation to said expansible means, and means actuated by the stem within the cap for controlling the flow of water through the sealing disk into the casing.

1,025,740. Closet and Urinal Flusher. Bert E. Dorman, Moline, Ill., assignor of one-half to William Coyle, Sr., Moline, Ill. In a closet flusher the combination with a tank having inlet and outlet pipes, of an air pipe, valves for closing the air pipe and outlet pipe, an air chamber connected to the tank adapted to receive the air from the tank as the water is admitted for filling the tank, means connecting the chamber and valves whereby they are operated for discharging the water from the tank and admitting air thereto when the tank has become sufficiently filled with water.



1,025,189. Disinfectant-Holder. Joseph R. Jackson, Memphis, Tenn. A disinfectant holder consisting of a coiled spring forming a hollow body with disconnected ends one of which is inwardly disposed, a strip having at its ends loops which snugly receive the opposite side portions of the spring and which may be turned upon the convolutions thereof to a desired position between the ends of the spring.

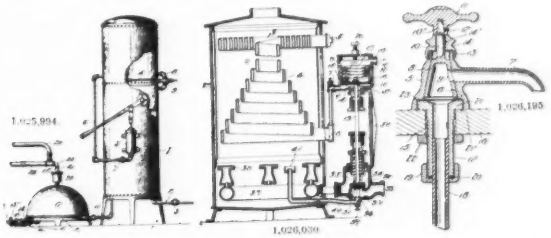
1,025,166. Flushing Apparatus. Christian S. Sparkling, Moline, Ill. The combination with a bowl having a hinged seat and a flushing tank provided with a valve, of a standard arranged adjacent to the bowl, a horizontally disposed bar pivotally mounted in said standard and yieldingly held in its horizontal position, means connected to one end of said bar to actuate the tank valve and open the same, a spring pressed pivoted member mounted at one end in the standard, a trip member pivotally mounted in the free end of said spring pressed member, said trip member having a flange on one end, said horizontal bar being provided with a shoulder on one end with which



the flange of the tip member cooperates, the upper end of said trip member engaging the seat and normally supporting the same in an elevated position, and means coacting with means on the trip member to engage the flange of the trip member with the shoulder of said bar when the trip member is forced downwardly by pressure upon the seat whereby said horizontal bar is moved to open the valve when pressure on the seat is removed.

1,025,994. Vacuum Cleaning System. John R. Pettiford, St. Louis, Mo., assignor to Charles E. Gaffney, St. Louis, Mo. In a vacuum cleaning system, a fuel burner, a steam generating coil arranged to be heated by said burner, a hood inclosing said coil, a valve chamber connected to the upper end of said coil, a float valve in said valve chamber, an exhaust pipe, a passage from said exhaust pipe to said valve chamber, a valve for said passage controlled by said float, an aspirator in said passage projecting into said exhaust pipe, and a suction pipe opening into said exhaust pipe, substantially as specified.

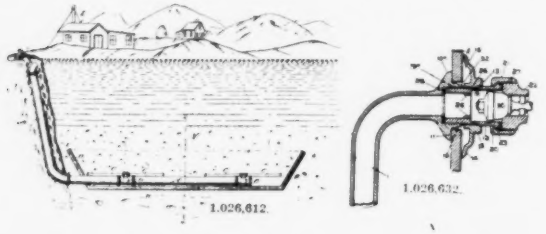
1,026,030. Water-Heater. Nelson G. Goreau, New Orleans, La. In water heating apparatus, the combination of a lower heating coil composed of a tube of vertically elongated cross section, the convolutions of the tube being arranged approximately in conical form and just far enough apart to permit



flame to pass between the two, and an approximately flat heating coil above the first, the coils being connected in series.

1,026,195. Valve. George A. Baughan, Seattle, Wash. A basin faucet comprising a substantially frusto-conical casing providing a valve chamber, said chamber of frusto-conical shape in contour, said casing at its lower end provided with an offset interiorly threaded annual flange depending from and constituting a support for the casing, said flange further provided with a socket, said casing further provided at its top with a peripherally threaded annual collar, a spout communicating with said chamber, a frusto-conical shaped hollow plug mounted in said chamber and engaging the walls thereof and provided with a side opening adapted to communicate with said spout, said plug having a closed top and being of less length than the chamber, a stem integral with the top of the plug and projecting above said peripherally threaded collar, a cap engaging said threaded collar and through which said stem projects, a handle connected to the

projecting end of the stem, said cap constituting a lifting nut for adjustment of the plug, a sleeve having its upper end formed with a laterally-projecting annular peripherally threaded head extending in said socket and engaging with the threads of said offset flange of the casing whereby the latter is coupled with the sleeve, and means in connection with said head for fixedly securing the sleeve and casing to a support, the lower faces of the annular flange and the threaded head being flush and both engaging said support.

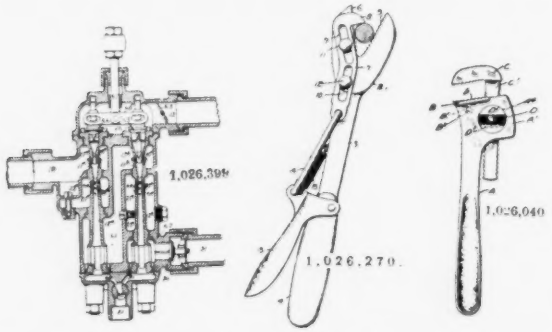


1,026,612. Water Filtration and Supply System. Lloyd E. Smith, Charleston, W. Va. In a system of water filtration and supply as described, the combination with an intake pipe and its connections, of a shield constructed in the form of a tray having closed bottom and sides and open top, and arranged horizontally and buried in a sand-bed, the pipes being arranged directly over the shield, as described.

1,026,632. Bath or Basin Fitting. Philip Mueller, Decatur, Ill., assignor to H. Mueller Manufacturing Co., Decatur, Ill., a corporation of Illinois. In a lavatory fitting, a supply pipe having an enlarged outlet provided with an annular flange having a flat face on one side to bear against the outer wall of a lavatory fitting, and an integral projection from said face larger than supply pipe extending into an aperture in said lavatory member, said projection having a screw threaded opening continuous with the bore of the water pipe, a thimble screwed into the threaded opening of said projection on the water pipe, said thimble having means on its opposite end for the attachment of a cock, and a clamping member threaded onto the intermediate portion of said thimble adapted to engage the inner wall of the lavatory member, and in connection with the flange on said supply pipe secure the latter and the thimble in fixed position.

Heating Department.

1,026,399. Injector. Ernst Koerting, Pegi, near Genoa, Italy, assignor to Schutte & Koerting Company, Philadelphia, Pa., a corporation of Pennsylvania. An injector having a mixing couple for steam and water comprising a nozzle and a converging combining tube and having an inlet for admitting secondary water to the injector tube beyond the point where the combining tube of the mixing couple for steam and water reaches its smallest cross-section.



1,026,270. Pipe-Wrench. Wilber W. Leonard, Hinckley, Minn. The combination, with a pipe wrench, having a V-shaped recess, the inclined walls of which are serrated and form rigid jaws, of a sliding bar arranged upon said wrench head, and means for moving said bar and causing a portion thereof to project partially across the space between said jaws.

1,026,040. Pipe-Wrench. William Andrew Hyle, Toronto, Canada, assignor to Macdonald and Sons, Limited, Toronto, Canada. In a pipe-wrench, the combination with the main body member provided with an enlarged jaw member and having an orifice extending through the enlarged jaw member at the back and provided with side circular recesses, of an adjustable jaw member provided with a screw threaded shank, a nut internally threaded to fit the shank and located in the circular recesses, and sectoral blocks fitting above and below the nut and provided with openings through which the shank passes as and for the purpose specified.

GOVERNMENT CONTRACTS TO BE AWARDED.

Supervising Architect, James Knox Taylor, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 p. m., on July 8, 1912, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and interior lighting fixtures) of the extension, remodeling, etc., of the United States post office at Portsmouth, O. The extension is to be of one and two stories and basement, of approximately 2,100 square feet ground area, brick faced with slate roof, and of non-fireproof construction, except the first floor.

Until 3 p. m., on June 29, 1912, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and interior lighting fixtures) of the United States post office at Austin, Texas. The building is two stories and basement, stone and brick faced, of fireproof construction (except roof), with a ground area of approximately 15,200 square feet.

Until 3 p. m., on June 9, 1912, for the extension, remodeling, etc. (including gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures, and approaches), of the United States post office at Evanston, Ill. The work contemplated is a one-story basement and mezzanine extension of approximately 3,300 square feet ground area, fireproof construction, stone facing and tin roof, and certain remodeling and repairs of present building.

Until 3 p. m., on June 28, 1912, for the extension, remodeling, etc. (including plumbing, gas piping, heating apparatus, electric conduits and wiring system and interior lighting fixtures) of the United States post office and court house at Reidsville, N. C. The extension will be two stories and basement with a ground area of about 1,470 square feet; non-fireproof construction; brick faced; slate roof.

Until 3 p. m., on July 10, 1912, for the extension, remodeling, etc. (including plumbing, gas piping, heating apparatus, electric conduits and wiring system and interior lighting fixtures) of the United States post office at Lansing, Mich. The extension is about 38 by 74 feet, two stories and basement, stone faced, slate roof, fireproof construction.

Until 3 p. m., on July 2, 1912, for the extension, remodeling, etc. (including plumbing, gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures, and approaches), of the United States post office and custom house at Traverse City, Mich.

Until 3 p. m., on July 2, 1912, for the construction, complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and lighting fixtures) of the United States post office at Billings, Mont. The building is three stories and basement, with a ground area of approximately 7,250 square feet. Fireproof construction; stone and brick facing; tin roof.

All proposals should be in accordance with drawings and specifications, copies of which may be obtained from the custodians of the above sites, or from the Supervising Architect at Washington, D. C.

Cincinnati, O.—The William Hillenbrand Co. has secured the contract for the plumbing in Alfred C. Shepherd's $20,000 residence on Elmhurst Place.

Ottawa, Ill.—John M. Dougherty has been awarded the contract for the plumbing and heating of the new St. Pat- school building now being erected here. The contract amounts to $4,700.

St. Louis, Mo.—The Elliott & Barry Engineering Co. has secured the contracts for the installation of heating systems in the new First National Bank building at Roswell, N. M., and in the new Paso Del Norte Hotel at El Paso, Tex.